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OM protein - protein search, using sw model

Run on: May 4, 2005, 11:39:31 ; Search time 162 Seconds
(without alignments)
112.208 Million cell updates/sec

Title: US-09-107-979-4
Sequence: 1 HFKRCRDLAYCLNDECF.....SHKRCRKEGYGVRCDFL 47
Perfect score: 277

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 2105692 seqs, 386760381 residues
Total number of hits satisfying chosen parameters: 2105692

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A_Geneseq_16Dec04:*
1: geneseqp1980s:*
2: geneseqp1990s:*
3: geneseqp2000s:*
4: geneseqp2001s:*
5: geneseqp2002s:*
6: geneseqp2003as:*
7: geneseqp2003bs:*
8: geneseqp2004s:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match Length	ID	Description
1	277	100.0	47 2 AAW97622	AAW97622 Human neu
2	277	100.0	48 5 AAG66046	AAG66046 Mouse NRG
3	277	100.0	52 6 AAE36807	AAE36807 Human neu
4	277	100.0	157 2 AAY05451	AAY05451 Human neu
5	277	100.0	157 8 ADN48870	ADN48870 Human neu
6	277	100.0	360 2 AAW97621	AAW97621 Human neu
7	277	100.0	362 2 AAW97620	AAW97620 Mouse neu
8	277	100.0	502 5 ABB08776	ABB08776 Human neu
9	277	100.0	696 2 AAW97619	AAW97619 Human neu
10	277	100.0	696 5 AAG32080	AAW97617 Mouse neu
11	277	100.0	713 2 AAG32061	ABG32061 Mouse nov
12	277	100.0	720 2 AAW97618	AAW97618 Human neu
13	277	100.0	720 2 AAY05452	AAW97618 Human neu
14	277	100.0	720 5 AAG32065	ABG32065 Human neu
15	277	100.0	720 8 ADN48890	ADN48890 Human nov
16	277	100.0	52 2 AAW05182	AAW05182 Neu diffe
17	277	100.0	52 3 AAY69983	AAY69983 NDF/heres
18	277	100.0	52 3 AAB12602	AAB12602 Human NDF
19	277	100.0	52 2 AAW05184	AAW05184 Neu diffe
20	277	100.0	52 6 AAE36803	AAE36803 Human neu
21	277	100.0	53 8 ADN48885	ADN48885 Human neu
22	277	100.0	63 2 AAR55659	AAR55659 EGFL2. 3/
23	277	100.0	63 2 AAR46918	AAR46918 EGFL2. 3/
24	277	100.0	63 2 AAR67250	AAR67250 Human epi
25	277	100.0	63 2 AAR67250	AAR67250 Human epi

26	113.5	41.0	63 2 AAR6076	AAR6076 Epidermal
27	113.5	41.0	63 2 AAW09363	AAW09363 EGFL2. 8/
28	113.5	41.0	63 2 AAR87461	AAR87461 Epidermal
29	113.5	41.0	66 3 AAB36702	AAB36702 EGF-1like
30	113.5	41.0	83 2 AAR55663	AAR55663 EGFL6. 3/
31	113.5	41.0	83 2 AAR46922	AAR46922 EGFL6. 3/
32	113.5	41.0	83 2 AAR67254	AAR67254 Human epi
33	113.5	41.0	83 2 AAR6080	AAR6080 Epidermal
34	113.5	41.0	83 2 AAW09367	AAW09367 EGFL6. 8/
35	113.5	41.0	83 2 AAR87465	AAR87465 Epidermal
36	113.5	41.0	88 2 AAR55662	AAR55662 EGFL5. 3/
37	113.5	41.0	88 2 AAR46921	AAR46921 EGFL5. 3/
38	113.5	41.0	88 2 AAR67253	AAR67253 Human epi
39	113.5	41.0	88 2 AAR6079	AAR6079 Epidermal
40	113.5	41.0	88 2 AAW09366	AAW09366 EGFL5. 8/
41	113.5	41.0	88 2 AAR87464	AAR87464 Epidermal
42	113.5	41.0	99 5 ABJ00043	ABJ00043 Human neu
43	113.5	41.0	99 5 ABJ00081	ABJ00081 Human neu
44	113.5	41.0	99 8 ADH77520	ADH77520 Human neu
45	113.5	41.0	101 4 AAG67933	AAG67933 Human NRG

ALIGNMENTS

RESULT 1
AAW97622 standard; protein; 47 AA.
ID AAW97622; AAW97622;
AC AAW97622;
AD 10-MAY-1999 (first entry)
AE 10-MAY-1999 (first entry)
AF Human neurogulin related ligand NRG3 EGF-1like domain.
AG Human neurogulin related ligand NRG3 hNRG3h1; human; ErbB4 receptor;
AH signal transduction; nervous system disorder; neurodegeneration;
AI neuropathy; therapy; diagnosis; epidermal growth factor; EGF;
AJ immunoadhesin.
AK Homo sapiens.
AL W09902681-A1.
AM 21-JAN-1999.
AN 30-JUN-1998; 98WO-US013411.
AO 09-JUL-1997; 97US-0052019P.
AP 24-JUL-1997; 97US-00899437.
AQ (GERTH) GENENTECH INC.
AR Godowaki PJ, Mark MR, Zhang D;
AS WPI, 1999-120882/10.
AT New isolated neurogulin related ligand-3 - used to develop products for
AU treating nervous system disorders, e.g. stroke, ischaemia, infection,
AV malignancy, Alzheimer's disease or Down's syndrome.
AW Claim 30; Page 64; 101pp; English.
AX This is the epidermal growth factor (EGF)-like domain of human neurogulin
AY related ligand NRG3 (see also AAW97618), a novel member of the EGF-1like
AZ family of protein ligands that binds to the ErbB4 receptor and activates
BA ErbB4 receptor tyrosine phosphorylation. The EGF-1 like domain of NRG3 is
BB distinct from the EGF-1like domains of NRG1 and NRG2. The invention
BC provides human and murine polypeptides (see also AAW97617) that have at
BD least 75% homology to the NRG3 EGF-1like domain, as well as expression
BE vectors, host cells and methods for the recombinant production of novel
BF NRG3s. The NRG3 polypeptides and polynucleotides and can be used to
BG enhance the survival, proliferation or differentiation of cells having

the ErbB4 receptor in vivo and in vitro. They can be used to prevent or treat damage to a nerve or damage to other NRG3-expressing or NRG3-responsive cells, e.g., brain, heart, or kidney cells. In particular, they can be used to treat diseases which involve neural cell growth such as demyelination, or damage or loss of glial cells (e.g., multiple sclerosis). They can be used to treat patients whose nervous system has been damaged by e.g., trauma, surgery, stroke, ischemia, infection, metabolic disease, nutritional deficiency, malignancy, or toxic agents. NRG3 can also be used to treat motor neuron disorders such as amyotrophic lateral sclerosis (Lou Gehrig's disease), Bell's palsy, conditions involving spinal muscular atrophy or paralysis, neurodegenerative disorders such as Alzheimer's disease, Parkinson's disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's syndrome, nerve deafness, and Meniere's disease. They can also be used to treat neuropathies associated with systemic disease including post-polio syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease, Refsum's disease, abetalipoproteinemia, Tangier disease, Krabbe's disease, metachromatic leukodystrophy, Fabry's disease and Dejerine-Scott's syndrome, to treat disease of skeletal muscle of smooth muscle, such as muscular dystrophy or diseases caused by skeletal or smooth muscle wasting. The products can also be used for detection, diagnosis, for the production of transgenic or knockout animals or for drug screening. A claimed immunodhesin comprises the human NRG3 EGF-like domain fused to an immunoglobulin sequence

Sequence 47 AA;

Query Match 100.0%; Score 277; DB 2; Length 47;
Best Local Similarity 100.0%; Pred. No. 7.5e-21;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

1 HFRPCRDKLAVCLNDGECFVETLTGSHKRCCKEGYGVACDQFL 47
1 HFRPCRDKLAVCLNDGECFVETLTGSHKRCCKEGYGVACDQFL 47

RESULT 2
AAG66046
ID AAG66046 standard; peptide; 48 AA.

AC AAG66046;
XX
DT 27-FEB-2002 (first entry)

DE Mouse NRG-3 EGF-like motif sequence.

XX ErbB-4; neuregulin-4; NRG-4; pro-NRG-4; neuroprotective; vulnary;
XX cerebroprotective; vasotropic; antiparkinsonian; anticonvulsant;
XX cytosolic; nootropic; EGF; NRG-3.

OS Mus musculus.

XX WO200181540-A2.

PD 01-NOV-2001.

PF 20-APR-2001; 2001WO-11000371.

PR 21-APR-2000; 2000US-00553769.

PA (YEDA) YEDA RES & DEV CO LTD.

PI Harari D, Yarden Y;

DR WPI; 2002-041398/05.

XX Novel ErbB-4 ligand, referred as neuregulin (NRG)-4 and polynucleotide
PT sequences encoding NRG-4, useful for upregulating or downregulating ErbB-
PT 4 receptor activity to treat Alzheimer's disease, stroke, gastric cancer.

XX Disclosure; Fig 1c; 153pp; English.

XX The invention relates to a novel ErbB-4 ligand, neuregulin-4 (NRG-4). NRG

-4 binds to mammalian ErbB-4 receptor and can be expressed by standard recombinant methodology. Pharmaceutical compositions comprising NRG-4 are useful for regulating an endogenous protein affecting ErbB-4 receptor activity in vivo. They are also useful for treating or preventing a disease condition or syndrome associated with dysregulation of an endogenous protein affecting ErbB-4 receptor activity, e.g., amyotrophic lateral sclerosis (Lou Gehrig's disease), Bell's palsy, spinal muscular atrophy, brain trauma, stroke, ischemia, Alzheimer's disease, Parkinson's disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's syndrome, nerve deafness, neuropathy, muscular dystrophy, extramammary Paget's disease, gastric, pancreatic, prostate, breast and ovarian cancer, cervical carcinoma, endometrial adenocarcinoma, pancreatic D cells-somatostatinoma and Zollinger-Ellison syndrome. The agent comprised in the pharmaceutical composition includes a polypeptide (e.g., a soluble ligand binding domain of ErbB-4 i.e., 1954; or a monoclonal, polyclonal, humanized, single chain antibody or an immunoreactive derivative of an antibody) capable of binding the endogenous protein affecting ErbB-4 receptor activity. Traceable synthetic/recombinant NRG-4-tagged molecules can serve as a diagnostic tool in which cells binding NRG-4 can be measured. Sequences AAG66044-53 represent the EGF-like motifs of various growth factors

Sequence 48 AA;

Query Match 100.0%; Score 277; DB 5; Length 48;
Best Local Similarity 100.0%; Pred. No. 7.6e-21;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

1 HFRPCRDKLAVCLNDGECFVETLTGSHKRCCKEGYGVACDQFL 47
2 HFRPCRDKLAVCLNDGECFVETLTGSHKRCCKEGYGVACDQFL 48

RESULT 3
AAE36807
ID AAE36807 standard; protein; 52 AA.

AC AAE36807;

DT 07-AUG-2003 (first entry)

DE Human neuregulin 3 EGF-like domain.

XX Epidermal growth factor receptor; EGFR; therapy; psoriasis; carcinoma;
XX cancer; rhabdomyosarcoma; mesothelioma; melanoma; glioblastoma; human;
XX receptor; EGF; neuregulin 3.

OS Homo sapiens.

XX WO2003014159-A1.

PD 20-FEB-2003.

PF 05-AUG-2002; 2002WO-AU001042.

PR 03-AUG-2001; 2001AU-00006827.

PR 03-AUG-2001; 2001AU-00006828.

PR 01-NOV-2001; 2001US-0335393P.

PR 01-NOV-2001; 2001US-0335393P.

PR 31-MAY-2002; 2002AU-00002731.

PR 11-JUN-2002; 2002US-0388171P.

XX (CSTR) COMMONWEALTH SCI & IND RES ORG.

PA (BIOM-) BIOMOLECULAR RES INST LTD.

PA (HALL-) HALL INST MEDICAL RES WALTER & ELIZA.

PA (LUDW-) LUDWIG INST CANCER RES.

PI Adams TE, Burgess AM, Elleman TC, Garrett TPJ, Jorissen RN;

XX Lou M, Lovrecz GO, McKern NM, Nice EC, Ward CW;

XX WPI; 2003-268181/26.

XX Selecting or designing compounds that interact with or inhibit formation

AAW97621;
10-MAY-1999 (first entry)

Human neuregulin related ligand NRG3 extracellular domain.

Neuregulin related ligand; NRG3; hNRG3B1; human; ErbB4 receptor;
signal transduction; nervous system disorder; neurodegeneration;
neuropathy; therapy; diagnosis.

Homo sapiens.

MO9902681-A1.

21-JAN-1999.

30-JUN-1998; 98WO-US013411.

09-JUL-1997; 97US-0052019P.

24-JUL-1997; 97US-00899437.

(GENT) GENENTECH INC.

Godowski PJ, Mark MR, Zhang D;

WPI, 1999-120882/10.

New isolated neuregulin related ligand-3 - used to develop products for
treating nervous system disorders, e.g. stroke, ischaemia, infection,
malignancy, Alzheimer's disease or Down's syndrome.

Claim 5(a); Page 69-70; 101pp; English.

This is the extracellular domain (ECD, aa1-360 of human neuregulin
related ligand NRG3 (see also AAW97618), a novel member of the epidermal
growth factor (EGF)-like family of protein ligands. NRG3 binds to the
ErbB4 receptor, but not to the ErbB2 or ErbB3 receptor. activates ErbB4
receptor tyrosine phosphorylation. The invention provides human and
murine polypeptides (see also AAW97617) that have at least 75% homology
to the NRG3 ECD, as well as expression vectors, host cells and methods
for the recombinant production of novel NRG3s. The NRG3 polypeptides and
polynucleotides and can be used to enhance the survival, proliferation or
differentiation of cells having the ErbB4 receptor in vivo and in vitro.
They can be used to prevent or treat damage to a nerve or damage to other
NRG3-expressing or NRG3-responsive cells, e.g. brain, heart, or kidney
cells. In particular, they can be used to treat diseases which involve
neural cell growth such as demyelination, or damage or loss of glial
cells (e.g. multiple sclerosis). They can be used to treat patients whose
nervous system has been damaged by e.g. trauma, surgery, stroke,
ischemia, infection, metabolic disease, nutritional deficiency,
malignancy, or toxic agents. NRG3 can also be used to treat motor neuron
disorders such as amyotrophic lateral sclerosis (Lou Gehrig's disease),
Bell's palsy, conditions involving spinal muscular atrophy or paralysis,
neurodegenerative disorders such as Alzheimer's disease, Parkinson's
disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's
syndrome, nerve deafness, and Meniere's disease. They can also be used to
treat neuropathies associated with systemic disease including post-polio
syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease,
Reifsum's disease, abetalipoproteinemia, Tanager disease, Krabbe's
disease, metachromatic leukodystrophy, Fabry's disease and Deterline-
Scottas syndrome, to treat disease of skeletal muscle of smooth muscle,
such as muscular dystrophy or diseases caused by skeletal or smooth
muscle wasting. The products can also be used for detection, diagnosis,
for the production of transgenic or knockout animals or for drug
screening

Sequence 360 AA;

Query Match 100.0%; Score 277; DB 2; Length 360;
Best Local Similarity 100.0%; Prid. No. 4,8e-20;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

1 HFKRCRDLAYCLNDECFVIEITLTGSHKRCCKEGYGVRCDFL 47

DB 286 HFKRCRDLAYCLNDECFVIEITLTGSHKRCCKEGYGVRCDFL 332

RESULT 7
AAW97620
ID AAW97620 standard; protein; 362 AA.

AAW97620;

10-MAY-1999 (first entry)

Mouse neuregulin related ligand NRG3 extracellular domain.

Neuregulin related ligand; NRG3; mouse; ErbB4 receptor;
signal transduction; nervous system disorder; neurodegeneration;
neuropathy; therapy; diagnosis.

Mus sp.

MO9902681-A1.

21-JAN-1999.

30-JUN-1998; 98WO-US013411.

09-JUL-1997; 97US-0052019P.

24-JUL-1997; 97US-00899437.

(GENT) GENENTECH INC.

Godowski PJ, Mark MR, Zhang D;

WPI, 1999-120882/10.

New isolated neuregulin related ligand-3 - used to develop products for
treating nervous system disorders, e.g. stroke, ischaemia, infection,
malignancy, Alzheimer's disease or Down's syndrome.

Claim 5(a); Page 62-63; 101pp; English.

This is the extracellular domain (ECD, aa1-362) of murine neuregulin
related ligand NRG3 (see also AAW97617), a novel member of the epidermal
growth factor (EGF)-like family of protein ligands. NRG3 binds to the
ErbB4 receptor, but not to the ErbB2 or ErbB3 receptor. activates ErbB4
receptor tyrosine phosphorylation. The invention provides human and
murine polypeptides (see also AAW97618) that have at least 75% homology
to the NRG3 ECD, as well as expression vectors, host cells and methods
for the recombinant production of novel NRG3s. The NRG3 polypeptides and
polynucleotides and can be used to enhance the survival, proliferation or
differentiation of cells having the ErbB4 receptor in vivo and in vitro.
They can be used to prevent or treat damage to a nerve or damage to other
NRG3-expressing or NRG3-responsive cells, e.g. brain, heart, or kidney
cells. In particular, they can be used to treat diseases which involve
neural cell growth such as demyelination, or damage or loss of glial
cells (e.g. multiple sclerosis). They can be used to treat patients whose
nervous system has been damaged by e.g. trauma, surgery, stroke,
ischemia, infection, metabolic disease, nutritional deficiency,
malignancy, or toxic agents. NRG3 can also be used to treat motor neuron
disorders such as amyotrophic lateral sclerosis (Lou Gehrig's disease),
Bell's palsy, conditions involving spinal muscular atrophy or paralysis,
neurodegenerative disorders such as Alzheimer's disease, Parkinson's
disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's
syndrome, nerve deafness, and Meniere's disease. They can also be used to
treat neuropathies associated with systemic disease including post-polio
syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease,
Reifsum's disease, abetalipoproteinemia, Tanager disease, Krabbe's
disease, metachromatic leukodystrophy, Fabry's disease and Deterline-
Scottas syndrome, to treat disease of skeletal muscle of smooth muscle,
such as muscular dystrophy or diseases caused by skeletal or smooth
muscle wasting. The products can also be used for detection, diagnosis,
for the production of transgenic or knockout animals or for drug
screening

CC syndrome, nerve deafness, and Meniere's disease. They can also be used to
 CC treat neuropathies associated with systemic disease including post-polio
 CC syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease,
 CC Refsum's disease, abetalipoproteinemia, Tangier disease, Krabbe's
 CC disease, metachromatic leukodystrophy, Fabry's disease and Dejerine-
 CC Scottas syndrome, to treat disease of skeletal muscle of smooth muscle,
 CC such as muscular dystrophy or diseases caused by skeletal or smooth
 CC muscle wasting. The products can also be used for detection, diagnosis,
 CC for the production of transgenic or knockout animals or for drug
 CC screening

XX SQ Sequence 696 AA;

Query Match 100.0%; Score 277; DB 2; Length 696;
 Best Local Similarity 100.0%; Pred. No. 8.9e-20;
 Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 HFKPCRDLDAYCINDGECFVLETITGSHKRCRCKEGYGVACDQFL 47
 |||||
 DB 286 HFKPCRDLDAYCINDGECFVLETITGSHKRCRCKEGYGVACDQFL 332

RESULT 10

ABG32080
 ID ABG32080 standard; protein; 696 AA.

XX AC ABG32080;

XX DT 05-NOV-2002 (first entry)

XX DE Novel human neuroguilin related ligand NRG3B2.

XX KW Neuroguilin related ligand; NRG3; neuroprotective; cell therapy;
 KW epidermal growth factor-like domain; EGF-like domain; Bell's palsy;
 KW ErbB4 receptor detection; amyotrophic lateral sclerosis; paralysis;
 KW Lou Gehrig's disease; spinal muscular atrophy; multiple sclerosis;
 KW neurodegenerative disorder; Alzheimer's disease; Parkinson's disease;
 KW epilepsy; Huntington's chorea; Down's syndrome; nerve deafness;
 KW Meniere's disease; neuropathy; distal sensorimotor neuropathy;
 KW autonomic neuropathy; hereditary neuropathy; Charcot-Marie-Tooth disease;
 KW Refsum's disease; Abetalipoproteinemia; Tangier disease;
 KW Krabbe's disease; Metachromatic leukodystrophy; Fabry's disease;
 KW Dejerine-Scottas syndrome; human; NRG3B2.

XX OS Homo sapiens.

XX PN US2002082229-A1.

XX PD 27-JUN-2002.

XX PF 26-MAR-2001; 2001US-00817647.

XX PR 24-JUL-1997; 97US-0053641P.

XX PR 30-JUN-1998; 98US-00107979.

XX PA (GETH) GENENTECH INC.

XX PI Godowski PJ, Mark MR, Zhang D;

XX DR N-PSDB; ABK30730.

XX PT A new neuroguilin related ligand designated NRG3 has an epidermal growth
 XX factor-like domain and binds to ErbB4 receptor, and is useful to prevent
 XX or treat NRG3 associated disorders, particularly nerve damage.

XX PT Example 1; Fig 4A-B; 60pp; English.

XX PS The invention describes a polypeptide comprising an amino acid sequence
 CC encoding an epidermal growth factor (EGF)-like domain, and having the
 CC binding characteristics of neuroguilin related ligand (NRG3). NRG3
 CC polypeptide can be used to detect ErbB4 receptor in a mammalian tissue
 CC sample, and also to prevent or treat disorders associated with NRG3 such

CC as: amyotrophic lateral sclerosis (Lou Gehrig's disease), Bell's palsy
 CC and various conditions involving spinal muscular atrophy or paralysis,
 CC neurodegenerative disorders such as Alzheimer's disease, Parkinson's
 CC disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's
 CC syndrome, nerve deafness, Meniere's disease, neuropathy such as distal
 CC sensorimotor neuropathy or autonomic neuropathy, hereditary neuropathies
 CC such as Charcot-Marie-Tooth disease, Refsum's disease,
 CC Abetalipoproteinemia, Tangier disease, Krabbe's disease, Metachromatic
 CC leukodystrophy, Fabry's disease and Dejerine-Scottas syndrome. This is
 CC the amino acid sequence of the novel human neuroguilin related ligand
 CC NRG3B2

XX SQ Sequence 696 AA;

Query Match 100.0%; Score 277; DB 5; Length 696;
 Best Local Similarity 100.0%; Pred. No. 8.9e-20;
 Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 HFKPCRDLDAYCINDGECFVLETITGSHKRCRCKEGYGVACDQFL 47
 |||||
 DB 286 HFKPCRDLDAYCINDGECFVLETITGSHKRCRCKEGYGVACDQFL 332

RESULT 11

AAW97617
 ID AAW97617 standard; protein; 713 AA.

XX AC AAW97617;

XX DT 10-MAY-1999 (first entry)

XX DE Mouse neuroguilin related ligand NRG3.

XX KW Neuroguilin related ligand; NRG3; mouse; ErbB4 receptor;
 KW signal transduction; nervous system disorder; neurodegeneration;
 KW neuropathy; therapy; diagnosis.

XX OS Mus sp.

XX PH Key Location/Qualifiers

FT Domain 1..362 /note="extracellular domain, specifically claimed in

FT FT Claim 5(a)"

FT FT 66..91

FT Region /note="hydrophobic region"

FT FT 105..286 /note="mucin-like Ser/Thr-rich region, contains sites

FT FT 287..334 /note="linked glycosylation"

FT FT /note="EGF-like domain"

FT FT 363..385 /note="transmembrane domain"

XX PN WO9902681-A1.

XX PD 21-JAN-1999.

XX PF 30-JUN-1998; 98WO-US013411.

XX PR 09-JUL-1997; 97US-0052019P.

XX PR 24-JUL-1997; 97US-00899437.

XX PA (GETH) GENENTECH INC.

XX PI Godowski PJ, Mark MR, Zhang D;

XX DR N-PSDB; AAX06987.

XX PT New isolated neuroguilin related ligand-3 - used to develop products for
 XX treating nervous system disorders, e.g. stroke, ischaemia, infection,
 XX malignancy, Alzheimer's disease or Down's syndrome.

PS Claim 5(b); Page 59-62; 101pp; English.

CC This is the amino acid sequence of murine neuregulin related ligand NRG3,
 CC a novel member of the epidermal growth factor (EGF)-like family of
 CC protein ligands that binds to the ErbB4 receptor, but not to the ErbB2 or
 CC ErbB3 receptor, and which activates ErbB4 receptor tyrosine
 CC phosphorylation. The sequence was deduced from the nucleotide sequences
 CC of cDNA clones (see AA06987) from a mouse brain library. The EGF-like
 CC domain of NRG3 is distinct from those of NRG1 or NRG2, and NRG3 displays
 CC receptor binding characteristics that are distinct from those of other
 CC neuregulins. The invention provides human and murine NRG3 polypeptides
 CC (see also AA097618), expression vectors, host cells and methods for the
 CC recombinant production of NRG3s. The NRG3 polypeptides and
 CC polynucleotides and can be used to enhance the survival, proliferation or
 CC differentiation of cells having the ErbB4 receptor in vivo and in vitro.
 CC They can be used to prevent or treat damage to a nerve or damage to other
 CC NRG3-expressing or NRG3-responsive cells, e.g. brain, heart, or kidney
 CC cells. In particular, they can be used to treat diseases which involve
 CC neural cell growth such as demyelination, or damage or loss of glial
 CC cells (e.g. multiple sclerosis). They can be used to treat patients whose
 CC nervous system has been damaged by e.g. trauma, surgery, stroke,
 CC ischemia, infection, metabolic disease, nutritional deficiency,
 CC malignancy, or toxic agents. NRG3 can also be used to treat motor neuron
 CC disorders such as amyotrophic lateral sclerosis (Lou Gehrig's disease),
 CC Bell's palsy, conditions involving spinal muscular atrophy or paralysis,
 CC Refsum's disease, abetalipoproteinemia, Tangier disease, Krabbe's
 CC disease, neurodegenerative disorders such as Alzheimer's disease, Parkinson's
 CC disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's
 CC syndrome, nerve deafness, and Meniere's disease. They can also be used to
 CC treat neuropathies associated with systemic disease including post-polio
 CC syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease,
 CC Refsum's disease, abetalipoproteinemia, Tangier disease, Krabbe's
 CC disease, metachromatic leukodystrophy, Fabry's disease and Dejerine-
 CC Scotts syndrome, to treat disease of skeletal muscle of smooth muscle,
 CC such as muscular dystrophy or diseases caused by skeletal or smooth
 CC muscle wasting. The products or diseases also be used for detection, diagnosis,
 CC for the production of transgenic or knockout animals or for drug
 CC screening
 CC XX
 SO Sequence 713 AA;

* Query Match 100.0%; Score 277; DB 2; Length 713;
 Best Local Similarity 100.0%; Pred. No. 9.1e-20;
 Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFKPCRDKDLAYCLNDGECFVIEITLGSNHCRCCKEGYGVRCDOFL 47
 DB 288 HFKPCRDKDLAYCLNDGECFVIEITLGSNHCRCCKEGYGVRCDOFL 334

RESULT 12
 ABG32061
 ID ABG32061 standard; protein; 713 AA.
 AC ABG32061;
 XX
 XX

05-NOV-2002 (first entry)

Mouse novel neuregulin related ligand NRG3.

Neuregulin related ligand; NRG3; neuroprotective; cell therapy;
 epidermal growth factor-like domain; EGF-like domain; Bell's palsy;
 ErbB4 receptor detection; amyotrophic lateral sclerosis; paralysis;
 Lou Gehrig's disease; spinal muscular atrophy; multiple sclerosis;
 neurodegenerative disorder; Alzheimer's disease; Parkinson's disease;
 epilepsy; Huntington's chorea; Down's syndrome; nerve deafness;
 Meniere's disease; neuropathy; distal sensorimotor neuropathy;
 autonomic neuropathy; hereditary neuropathy; Charcot-Marie-Tooth disease;
 Refsum's disease; Abetalipoproteinemia; Tangier disease;
 Krabbe's disease; Metachromatic leukodystrophy; Fabry's disease;
 Dejerine-Scotts syndrome; mouse.

Mus sp.

XX
 OS
 XX

Key Location/Qualifiers
 Domain 1..362
 /label= Extracellular domain
 /note= "Specifically claimed in claim 5"
 Domain 288..334
 /label= EGF-like domain
 /note= "Extracellular epidermal growth factor-like
 domain. Specifically claimed in claim 2"

US2002082229-A1.
 27-JUN-2002.
 26-MAR-2001; 2001US-00817647.
 24-JUL-1997; 97US-0053641P.
 30-JUN-1998; 98US-00107979.
 (GENT) GENENTECH INC.
 Godowski PJ, Mark MR, Zhang D;
 WPI; 2002-617760/66.
 N-PSDB; ABK30728.
 A new neuregulin related ligand designated NRG3 has an epidermal growth
 factor-like domain and binds to ErbB4 receptor, and is useful to prevent
 or treat NRG3 associated disorders, particularly nerve damage.
 Example 1; Fig 4A-B; 60pp; English.

The invention describes a polypeptide comprising an amino acid sequence
 encoding an epidermal growth factor (EGF)-like domain, and having the
 binding characteristics of neuregulin related ligand (NRG3). NRG3
 polypeptide can be used to detect ErbB4 receptor in a mammalian tissue
 sample, and also to prevent or treat disorders associated with NRG3 such
 as: amyotrophic lateral sclerosis (Lou Gehrig's disease), Bell's palsy
 and various conditions involving spinal muscular atrophy or paralysis,
 neurodegenerative disorders such as Alzheimer's disease, Parkinson's
 disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's
 syndrome, nerve deafness, Meniere's disease, neuropathy such as distal
 sensorimotor neuropathy or autonomic neuropathy, hereditary neuropathies
 such as Charcot-Marie-Tooth disease, Refsum's disease,
 Abetalipoproteinemia, Tangier disease, Krabbe's disease, Metachromatic
 leukodystrophy, Fabry's disease and Dejerine-Scotts syndrome. This is
 the amino acid sequence of the novel mouse neuregulin related ligand
 (NRG3)

Sequence 713 AA;
 Query Match 100.0%; Score 277; DB 5; Length 713;
 Best Local Similarity 100.0%; Pred. No. 9.1e-20;
 Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFKPCRDKDLAYCLNDGECFVIEITLGSNHCRCCKEGYGVRCDOFL 47
 DB 288 HFKPCRDKDLAYCLNDGECFVIEITLGSNHCRCCKEGYGVRCDOFL 334

RESULT 13
 AA097618
 ID AA097618 standard; protein; 720 AA.
 AC AA097618;
 XX
 XX

10-MAY-1999 (first entry)

Human neuregulin related ligand NRG3.

Neuregulin related ligand; NRG3; hNRG3B1; human; ErbB4 receptor;
 signal transduction; nervous system disorder; neurodegeneration;
 neuropathy; therapy; diagnosis.

XX
 OS
 XX

AC	ABG32065;	
XX		
DT	05-NOV-2002	(first entry)
XX		
DE	Human novel neuroregulin related ligand NRG3B1.	
XX		
KM	Neuregulin related ligand; NRG3; neuroprotective; cell therapy;	
KM	epidermal growth factor-like domain; EGF-like domain; Bell's palsy;	
KM	Erbb4 receptor detection; amyotrophic lateral sclerosis; paralyisis;	
KM	lou Gehrig's disease; spinal muscular atrophy; multiple sclerosis;	
KM	neurodegenerative disorder; Alzheimer's disease; Parkinson's disease;	
KM	epilepsy; Huntington's chorea; Down's syndrome; nerve deafness;	
KM	Meniere's disease; neuropathy; distal sensorimotor neuropathy;	
KM	autonomic neuropathy; hereditary neuropathy; Charcot-Marie-Tooth disease	
KM	Refsum's disease; Abetalipoproteinemia; Tangier disease;	
KM	Krabbe's disease; Metachromatic leukodystrophy; Fabry's disease;	
XX	Dejerine-Scott's syndrome; human; gene; ss; NRG3B1.	
OS		
XX	Homo sapiens.	
XX		
PH	Key	Location/Qualifiers
FT	Domain	1..360
FT		/label= "Extracellular domain
FT		/note= "Specifically claimed in claim 5"
FT	Domain	286...332
FT		/label= "EGF-like domain
FT		/note= "Extracellular epidermal growth factor-like domain"
XX		
FN	US2002082229-A1.	
XX		
PD	27-JUN-2002.	
XX		
PR	26-MAR-2001; 2001US-00817647.	
XX		
XX	24-JUN-1997; 97US-0053641P.	
PR	30-JUN-1998; 98US-00107979.	
XX		
PA	(GETH) GENENTECH INC.	
XX		
PI	Godowski PJ, Mark MR, Zhang D;	
XX		
DR	WPI; 2002-617760/66.	
DR	N-PSDB; ABK90731.	
XX		
PT	A new neuroregulin related ligand designated NRG3 has an epidermal growth	
PT	factor-like domain and binds to Erbb4 receptor, and is useful to prevent	
PT	or treat NRG3 associated disorders, particularly nerve damage.	
XX		
PS	Example 1; Fig 4A-B; 60pp; English.	
XX		
XX		
CC	The invention describes a polypeptide comprising an amino acid sequence	
CC	encoding an epidermal growth factor (EGF)-like domain, and having the	
CC	binding characteristics of neuroregulin related ligand (NRG3). NRG3	
CC	polypeptide can be used to detect Erbb4 receptor in a mammalian tissue	
CC	sample, and also to prevent or treat disorders associated with NRG3 such	
CC	as; amyotrophic lateral sclerosis (lou Gehrig's disease), Bell's palsy	
CC	and various conditions involving spinal muscular atrophy or paralysis,	
CC	neurodegenerative disorders such as Alzheimer's disease, Parkinson's	
CC	disease, epilepsy, multiple sclerosis, Huntingdon's chorea, Down's	
CC	syndrome, nerve deafness, Meniere's disease, neuropathy such as distal	
CC	sensorimotor neuropathy or autonomic neuropathy, hereditary neuropathies	
CC	such as Charcot-Marie-Tooth disease, Refsum's disease,	
CC	Abetalipoproteinemia, Tangier disease, Krabbe's disease, Metachromatic	
CC	leukodystrophy, Fabry's disease and Dejerine-Scott's syndrome. This is	
CC	the amino acid sequence of the novel human neuroregulin related ligand	
XX	(NRG3B1)	
XX		
XX	Sequence 720 AA;	
XX		

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QY      1  HKPRCKDCLAYCLNDGECFVIEITLGTSHKHCRCKEGYQGVRCDFL  47
      |||||
Db      286  HKPRCKDCLAYCLNDGECFVIEITLGTSHKHCRCKEGYQGVRCDFL  332

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Search completed: May 4, 2005, 12:04:04
Job time : 164 secs

Query Match	100.0%;	Score 277;	DB 5;	Length 720;
Best Local Similarity	100.0%;	Pred. No. 9.2e-20;		
Matches 47;	Conservative 0;	Mismatches 0;	Indels 0;	Gaps 0;

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GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.

OM protein - protein search, using sw model

Run on: May 4, 2005, 11:57:22 ; Search time 43 Seconds
(without alignments)
81.593 Million cell updates/sec

Title: US-09-107-979-4

Sequence: 1 HFKPCRDKLAYCLNDGECF.....SHKCRCKEGYGVRCDFL 47

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 513545 seqs, 74649064 residues

Total number of hits satisfying chosen parameters: 513545

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Database: Issued_Patents_Aa:*

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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	277	100.0	47	3	US-08-899-437-4
2	277	100.0	47	3	US-08-899-437-8
3	277	100.0	47	3	US-09-126-121-4
4	277	100.0	47	3	US-09-126-121-8
5	277	100.0	48	4	US-09-553-769-6
6	277	100.0	157	4	US-09-097-681-2
7	277	100.0	360	3	US-08-899-437-7
8	277	100.0	360	3	US-09-126-121-7
9	277	100.0	362	3	US-08-899-437-3
10	277	100.0	362	3	US-09-126-121-3
11	277	100.0	686	3	US-08-899-437-23
12	277	100.0	686	3	US-09-126-121-23
13	277	100.0	713	3	US-08-899-437-2
14	277	100.0	713	3	US-09-126-121-2
15	277	100.0	720	3	US-08-899-437-6
16	277	100.0	720	3	US-09-126-121-6
17	277	100.0	720	4	US-09-097-681-22
18	116.5	42.1	52	1	US-08-417-640A-1
19	116.5	42.1	52	1	US-08-760-815-1
20	116.5	42.1	52	2	US-08-761-038-1
21	116.5	42.1	52	3	US-09-238-182-1
22	113.5	41.0	49	3	US-08-899-437-14
23	113.5	41.0	49	3	US-09-126-121-14
24	113.5	41.0	50	3	US-08-753-007A-12
25	113.5	41.0	50	3	US-09-398-496-12
26	113.5	41.0	52	1	US-08-417-640A-3
27	113.5	41.0	52	1	US-08-760-815-3

28	113.5	41.0	52	2	US-08-761-038-3	Sequence 3, Appl1
29	113.5	41.0	53	4	US-09-097-681-17	Sequence 17, Appl1
30	113.5	41.0	54	1	US-08-179-481-111	Sequence 111, Appl1
31	113.5	41.0	63	3	US-08-341-018-62	Sequence 62, Appl1
32	113.5	41.0	63	3	US-08-470-335-221	Sequence 221, Appl1
33	113.5	41.0	63	3	US-08-470-339-221	Sequence 221, Appl1
34	113.5	41.0	63	4	US-08-467-602-415	Sequence 415, Appl1
35	113.5	41.0	63	4	US-08-411-295F-55	Sequence 55, Appl1
36	113.5	41.0	63	4	US-08-411-295F-98	Sequence 98, Appl1
37	113.5	41.0	65	4	US-08-411-295F-136	Sequence 136, Appl1
38	113.5	41.0	66	1	US-07-847-743B-10	Sequence 10, Appl1
39	113.5	41.0	66	1	US-08-456-201-10	Sequence 10, Appl1
40	113.5	41.0	66	2	US-08-456-241-10	Sequence 10, Appl1
41	113.5	41.0	66	3	US-09-020-880-2	Sequence 2, Appl1
42	113.5	41.0	66	3	US-09-101-544-2	Sequence 2, Appl1
43	113.5	41.0	66	5	PCT-US92-04295A-10	Sequence 10, Appl1
44	113.5	41.0	83	3	US-08-341-018-70	Sequence 70, Appl1
45	113.5	41.0	83	3	US-08-470-335-225	Sequence 225, Appl1

ALIGNMENTS

RESULT 1
US-08-899-437-4
; Sequence 4, Application US/08899437
; Patent No. 6121415
GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Winpatin (Genentech)
CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/899,437
; FILING DATE: 24-Jul-1997
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: P1084R1
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 4:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 47 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
; FEATURE:
; NAME/KEY: NRG3 EGF-like domain/amino acid seq.
; LOCATION: 1-47
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
US-08-899-437-4
Query Match 100.0%; Score 277; DB 3; Length 47;
Best Local Similarity 100.0%; Pred No. 3.1e-26;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
1 HFKPCRDKLAYCLNDGECFVLETLGSHKCRCKEGYGVRCDFL 47
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FEATURE:
NAME/KEY: NR03 BGF-like domain/amino acid seq.
LOCATION: 1-47
IDENTIFICATION METHOD:
OTHER INFORMATION:
US-09-126-121-8

Query Match 100.0%; Score 277; DB 3; Length 47;
Best Local Similarity 100.0%; Pred. No. 3.1e-26;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Db 1 HFKECRDKDLAYCLNDGECFVIEITLTGSHKRCCKEGYGVRCDOFL 47

RESULT 5
US-09-553-769-6
Sequence 6, Application US/09553769
Patent No. 6544759

GENERAL INFORMATION:
APPLICANT: Harari, Daniel
APPLICANT: Yarden, Yosef
TITLE OF INVENTION: NOVEL GROWTH FACTOR WHICH ACTS THROUGH ETRB-4 RECEPTOR TYROSINE K
FILE REFERENCE: 00/20522
CURRENT APPLICATION NUMBER: US/09/553,769
CURRENT FILING DATE: 2000-04-21
NUMBER OF SEQ ID NOS: 18
SOFTWARE: PatentIn version 3.0
SEQ ID NO 6
LENGTH: 48
TYPE: PRT
ORGANISM: Mus musculus
US-09-553-769-6

Query Match 100.0%; Score 277; DB 4; Length 48;
Best Local Similarity 100.0%; Pred. No. 3.1e-26;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFKECRDKDLAYCLNDGECFVIEITLTGSHKRCCKEGYGVRCDOFL 47
Db 2 HFKECRDKDLAYCLNDGECFVIEITLTGSHKRCCKEGYGVRCDOFL 48

RESULT 6
US-09-097-681-2
Sequence 2, Application US/09097681
Patent No. 6727077

GENERAL INFORMATION:
APPLICANT: Young, Paul
APPLICANT: King, C. Richier
APPLICANT: Hlilazi, Mai
APPLICANT: Ruben, Steve
TITLE OF INVENTION: Heretulin-like Factor
NUMBER OF SEQUENCES: 22
CORRESPONDENCE ADDRESS:
ADDRESSEE: Human Genome Sciences, Inc.
STREET: 9410 Key West Avenue
CITY: Rockville
STATE: MD
COUNTRY: US
ZIP: 20850

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/097,681
FILING DATE:
CLASSIFICATION:
PRIOR APPLICATION DATA:

APPLICATION NUMBER: US 60/049,942
FILING DATE: 17-JUN-1997
ATTORNEY/AGENT INFORMATION:
NAME: Hoover, Kenley K.
REGISTRATION NUMBER: 40,302
REFERENCE/DOCKET NUMBER: PF383PCT
TELECOMMUNICATION INFORMATION:
TELEPHONE: 301-3098504
TELEFAX: 301-309-8439

INFORMATION FOR SEQ ID NO: 2:

SEQUENCE CHARACTERISTICS:
LENGTH: 157 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-09-097-681-2

Query Match 100.0%; Score 277; DB 4; Length 157;
Best Local Similarity 100.0%; Pred. No. 1.1e-25;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFKECRDKDLAYCLNDGECFVIEITLTGSHKRCCKEGYGVRCDOFL 47
Db 31 HFKECRDKDLAYCLNDGECFVIEITLTGSHKRCCKEGYGVRCDOFL 77

RESULT 7
US-08-899-437-7
Sequence 7, Application US/08899437
Patent No. 6121415

GENERAL INFORMATION:
APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
ADDRESSEE: Genentech, Inc.
STREET: 1 DNA Way
CITY: South San Francisco
STATE: California
COUNTRY: USA
ZIP: 94080

COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Winpacin (Genentech)

CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/899,437
FILING DATE: 24-Jul-1997
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Conley, Deirdre L.
REGISTRATION NUMBER: 36,487
REFERENCE/DOCKET NUMBER: P1084R1
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/225-2066
TELEFAX: 650/952-9881

INFORMATION FOR SEQ ID NO: 7:

SEQUENCE CHARACTERISTICS:
LENGTH: 360 amino acids
TYPE: Amino Acid
TOPOLOGY: Linear

FEATURE:
NAME/KEY: hNR03 extracellular domain/Amino AcidSeq
LOCATION: 1-360
IDENTIFICATION METHOD:
OTHER INFORMATION:
US-08-899-437-7

Query Match 100.0%; Score 277; DB 3; Length 360;
Best Local Similarity 100.0%; Pred. No. 2.5e-25;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFKPCRDKLAYCLNDGECFVIEITLGS HKCRCKEGYGVRCDFL 47
DB 286 HFKPCRDKLAYCLNDGECFVIEITLGS HKCRCKEGYGVRCDFL 332

RESULT 8
US-09-126-121-7
Sequence 7, Application US/09126121
Patent No. 6252051
GENERAL INFORMATION:
APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
TITLE OF INVENTION: Ligands and Uses Therefor
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESSES:
ADDRESSEE: Genentech, Inc.
STREET: 1 DNA Way
CITY: South San Francisco
STATE: California
COUNTRY: USA
ZIP: 94080
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WinPatIn (Genentech)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/126,121
FILING DATE: 30-Jul-1998
CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
NAME: Conley, Deirdre L.
REGISTRATION NUMBER: 36,487
REFERENCE/DOCKET NUMBER: P1084R1D1
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/225-2066
TELEFAX: 650/952-9881
INFORMATION FOR SEQ ID NO: 7:
SEQUENCE CHARACTERISTICS:
LENGTH: 360 amino acids
TYPE: Amino Acid
TOPOLOGY: Linear
FEATURE:
NAME/KEY: mNRG3 extracellular domain/Amino AcidSeq
LOCATION: 1-360
IDENTIFICATION METHOD:
OTHER INFORMATION:
US-09-126-121-7
Query Match 100.0%; Score 277; DB 3; Length 360;
Best Local Similarity 100.0%; Pred. No. 2.5e-25;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFKPCRDKLAYCLNDGECFVIEITLGS HKCRCKEGYGVRCDFL 47
DB 286 HFKPCRDKLAYCLNDGECFVIEITLGS HKCRCKEGYGVRCDFL 332

RESULT 9
US-08-899-437-3
Sequence 3, Application US/08899437
Patent No. 6121415
GENERAL INFORMATION:
APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
TITLE OF INVENTION: Ligands and Uses Therefor
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESSES:
ADDRESSEE: Genentech, Inc.
STREET: 1 DNA Way
CITY: South San Francisco
STATE: California

COUNTRY: USA
ZIP: 94080
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WinPatIn (Genentech)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/899,437
FILING DATE: 24-Jul-1997
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Conley, Deirdre L.
REGISTRATION NUMBER: 36,487
REFERENCE/DOCKET NUMBER: P1084R1
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/225-2066
TELEFAX: 650/952-9881
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 362 amino acids
TYPE: Amino Acid
TOPOLOGY: Linear
FEATURE:
NAME/KEY: mNRG3 extracellular domain/Amino acid seq
LOCATION: 1-362
IDENTIFICATION METHOD:
OTHER INFORMATION:
US-08-899-437-3

Query Match 100.0%; Score 277; DB 3; Length 362;
Best Local Similarity 100.0%; Pred. No. 2.5e-25;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFKPCRDKLAYCLNDGECFVIEITLGS HKCRCKEGYGVRCDFL 47
DB 286 HFKPCRDKLAYCLNDGECFVIEITLGS HKCRCKEGYGVRCDFL 334

RESULT 10
US-09-126-121-3
Sequence 3, Application US/09126121
Patent No. 6252051
GENERAL INFORMATION:
APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
TITLE OF INVENTION: Ligands and Uses Therefor
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESSES:
ADDRESSEE: Genentech, Inc.
STREET: 1 DNA Way
CITY: South San Francisco
STATE: California
COUNTRY: USA
ZIP: 94080
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WinPatIn (Genentech)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/126,121
FILING DATE: 30-Jul-1998
CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
NAME: Conley, Deirdre L.
REGISTRATION NUMBER: 36,487
REFERENCE/DOCKET NUMBER: P1084R1D1
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/225-2066
TELEFAX: 650/952-9881
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:

LENGTH: 362 amino acids
TYPE: Amino Acid
TOPOLOGY: Linear
FEATURE:
NAME/KEY: mNRG3 extracellular domain amino acid seq
LOCATION: 1-362
IDENTIFICATION METHOD:
OTHER INFORMATION:
US-09-126-121-3

Query Match 100.0%; Score 277; DB 3; Length 362;
Best Local Similarity 100.0%; Pred. No. 2.5e-25;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFKPCRDKLAYCLNDECFVITLTGSHKCRCKEGYGVRCDFL 47
DB 288 HFKPCRDKLAYCLNDECFVITLTGSHKCRCKEGYGVRCDFL 334

RESULT 11

US-08-899-437-23
Sequence 23, Application US/08899437
Patent No. 6121415
GENERAL INFORMATION:
APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
ADDRESSEE: Genentech, Inc.
STREET: 1 DNA Way
CITY: South San Francisco
STATE: California
COUNTRY: USA
ZIP: 94080
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Winpatin (Genentech)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/899,437
FILING DATE: 24-Jul-1997
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Conley, Deirdre L.
REGISTRATION NUMBER: 36,487
REFERENCE/DOCKET NUMBER: P1084R1
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/952-2066
TELEFAX: 650/952-9881
INFORMATION FOR SEQ ID NO: 23:
SEQUENCE CHARACTERISTICS:
LENGTH: 696 amino acids
TYPE: Amino Acid
TOPOLOGY: Linear
FEATURE:
NAME/KEY: Human NRG3B2
LOCATION: 1-696
IDENTIFICATION METHOD:
OTHER INFORMATION:
US-08-899-437-23

Query Match 100.0%; Score 277; DB 3; Length 696;
Best Local Similarity 100.0%; Pred. No. 4.9e-25;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFKPCRDKLAYCLNDECFVITLTGSHKCRCKEGYGVRCDFL 47
DB 286 HFKPCRDKLAYCLNDECFVITLTGSHKCRCKEGYGVRCDFL 332

RESULT 12

US-09-126-121-23

Sequence 23, Application US/09126121
Patent No. 6252051
GENERAL INFORMATION:
APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
ADDRESSEE: Genentech, Inc.
STREET: 1 DNA Way
CITY: South San Francisco
STATE: California
COUNTRY: USA
ZIP: 94080

COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk

COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Winpatin (Genentech)

CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/126,121
FILING DATE: 30-Jul-1998

CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
NAME: Conley, Deirdre L.

REGISTRATION NUMBER: 36,487
REFERENCE/DOCKET NUMBER: P1084R1D1

TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/952-2066
TELEFAX: 650/952-9881

INFORMATION FOR SEQ ID NO: 23:
SEQUENCE CHARACTERISTICS:
LENGTH: 696 amino acids
TYPE: Amino Acid
TOPOLOGY: Linear

FEATURE:
NAME/KEY: Human NRG3B2
LOCATION: 1-696

IDENTIFICATION METHOD:
OTHER INFORMATION:
US-09-126-121-23

Query Match 100.0%; Score 277; DB 3; Length 696;
Best Local Similarity 100.0%; Pred. No. 4.9e-25;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFKPCRDKLAYCLNDECFVITLTGSHKCRCKEGYGVRCDFL 47
DB 286 HFKPCRDKLAYCLNDECFVITLTGSHKCRCKEGYGVRCDFL 332

RESULT 13

US-08-899-437-2
Sequence 2, Application US/08899437
Patent No. 6121415
GENERAL INFORMATION:
APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
ADDRESSEE: Genentech, Inc.
STREET: 1 DNA Way
CITY: South San Francisco
STATE: California
COUNTRY: USA
ZIP: 94080
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Winpatin (Genentech)

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OTHER INFORMATION:
US-09-126-121-2
Query Match 100.0%; Score 277; DB 3; Length 713;
Best Local Similarity 100.0%; Pred. No. 56-25;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Cy 1 HFKPRCDKLAYCLNDGECFVIEITLTGSHHGCRCKEGYGVRCDOFL 47
Db HFKPRCDKLAYCLNDGECFVIEITLTGSHHGCRCKEGYGVRCDOFL 334

RESULT 15
US-08-899-437-6
Sequence 6; Application US/08899437
Patent No. 6121415
GENERAL INFORMATION:
APPLICANT: Goddard, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
TITLE OF INVENTION: Ligands and Uses Therefor
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
ADDRESSEE: Genentech, Inc.
STREET: 1 DNA Way
CITY: South San Francisco
STATE: California
COUNTRY: USA
ZIP: 94080

COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WinPatIn (Genentech)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/899,437
FILING DATE: 24-Jul-1997
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Conley, Delidre L.
REGISTRATION NUMBER: 36,487
REFERENCE/DOCKET NUMBER: P1084R1
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/225-2066
TELEFAX: 650/952-9881
INFORMATION FOR SEQ ID NO: 6:
SEQUENCE CHARACTERISTICS:
LENGTH: 720 amino acids
TYPE: Amino Acid
TOPOLOGY: Linear
FEATURE:
NAME/KEY: hNRG3b1 amino acid sequence
LOCATION: 1-720
IDENTIFICATION METHOD:
OTHER INFORMATION:
US-08-899-437-6

Query Match 100.0%; Score 277; DB 3; Length 720;
Best Local Similarity 100.0%; Pred. No. 5,1e-25;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Cy 1 HFKPRCDKLAYCLNDGECFVIEITLTGSHHGCRCKEGYGVRCDOFL 47
Db HFKPRCDKLAYCLNDGECFVIEITLTGSHHGCRCKEGYGVRCDOFL 332

Search completed: May 4, 2005, 12:08:38
Job time : 44 secs

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GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: May 4, 2005, 11:54:21 ; Search time 176 Seconds
(without alignments)
136.748 Million cell updates/sec

Title: US-09-107-979-4
Perfect score: 277
Sequence: 1 HFRPCRDKDLAYCLNDECF.....SHKRCCKEGYGVGRCDQFL 47

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 1612378 seqs, 512079187 residues

Total number of hits satisfying chosen parameters: 1612378

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database: UniProt_03.*
1: uniprot_sprot.*
2: uniprot_trembl.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match Length	ID	Description
1	277	100.0	NRG3_MOUSE	Q35181 mus musculu
2	277	100.0	NRG3_HUMAN	P66976 homo sapien
3	126.5	45.7	NRG1_XENLA	O93383 xenopus lae
4	113.5	41.0	O6TGR9	O6TGR9 oryctolagus
5	113.5	41.0	O35947	O35947 mesocricetu
6	113.5	41.0	O7RTW1	O7RTW1 homo sapien
7	113.5	41.0	NRG1_HUMAN	O02297 h pro-neure
8	113.5	41.0	O7RTW8	O7RTW8 homo sapien
9	111.5	40.3	O9ESB9	Q9ESB9 ratius norv
10	111.5	40.3	O9ESB0	Q9ESB0 ratius norv
11	110	39.4	NRG4_MOUSE	O6WKA4 mus musculu
12	109	39.4	NRG4_HUMAN	O6WKA4 mus musculu
13	104.5	37.7	O6PK61	O6PK61 homo sapien
14	104.5	37.7	O7RTW0	O7RTW0 homo sapien
15	104.5	37.7	O07112	O07112 bos taurus
16	104.5	37.7	SMDF_HUMAN	O15491 homo sapien
17	104.5	37.7	O961B3	O961B3 homo sapien
18	104.5	37.7	O6ICV5	O6ICV5 homo sapien
19	104.5	37.7	O7RTW2	O7RTW2 homo sapien
20	104.5	37.7	O7RTW9	O7RTW9 homo sapien
21	104.5	37.7	O7RTW3	O7RTW3 homo sapien
22	104.5	37.7	O7RTW4	O7RTW4 homo sapien
23	104	37.5	NRG2_MOUSE	P66974 mus musculu
24	103.5	37.4	O810X0	O810X0 mus musculu
25	103.5	37.4	O8BX76	O8BX76 mus musculu
26	103.5	37.4	O6DP98	O6DP98 mus musculu
27	103.5	37.4	O6DR99	O6DR99 mus musculu
28	102.5	37.0	O9ESA7	Q9ESA7 ratius norv
29	102.5	37.0	O9ESA8	Q9ESA8 ratius norv
30	102.5	37.0	O9ESA6	Q9ESA6 ratius norv
31	102.5	37.0	O9ESA3	Q9ESA3 ratius norv

32	102.5	37.0	Q9ESA2	Q9ESA2 ratius norv
33	102.5	37.0	Q9ESA1	Q9ESA1 ratius norv
34	102.5	37.0	NRG1_RAT	P43322 r pro-neure
35	102.5	37.0	Q9ESB1	Q9ESB1 ratius norv
36	102.5	37.0	Q9ESB5	Q9ESB5 ratius norv
37	99	35.7	O91MW0	O91MW0 jumpy skin
38	98.5	35.6	NRG1_CHICK	O05199 gallus galli
39	98	35.4	O7OI06	O7OI06 anopheles g
40	97	35.0	O810X1	O810X1 mus musculu
41	92.5	33.4	O01768	O01768 caenorhaddi
42	91.5	33.0	JAG3_BRARE	Q90Y54 brachydantio
43	90.5	32.7	O86W00	O86W00 homo sapien
44	90	32.5	NRG2_HUMAN	O14511 homo sapien
45	90	32.5	NRG2_RAT	O35569 ratius norv

ALIGNMENTS

RESULT 1
NRG3_MOUSE STANDARD; PRT; 713 AA.
ID NRG3_MOUSE
AC O35181;
DT 16-OCT-2001 (Rel. 40, Created)
DT 16-OCT-2001 (Rel. 40, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
DE Pro-neuregulin-3 precursor (Pro-NRG3) [Contains: Neuregulin-3 (NRG-3)].
OS Name=NRG3;
GN Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxId=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Brain;
RX MEDLINE=97420720; PubMed=9275162; DOI=10.1073/pnas.94.18.9562;
RA Zhang D., Sliwkowski M.X., Mark M., Frantz G., Akita R., Sun Y.,
RA Hillan K., Crowley C., Brush J., Godowski P.U.;
RT "Neuregulin-3 (NRG3): a novel neural tissue-enriched protein that
RT binds and activates ErbB4.";
RT Proc. Natl. Acad. Sci. U.S.A. 94:9562-9567(1997).
CC -!- FUNCTION: Direct ligand for the ERBB4 tyrosine kinase receptor.
CC Binding results in ligand-stimulated tyrosine phosphorylation and
CC activation of the receptor. Does not bind to the EGF receptor,
CC ERBB2 or ERBB3 receptors.
CC -!- SUBCELLULAR LOCATION: Exists as an type I membrane protein and as
CC a proteolytically released soluble growth factor form. The
CC membrane-bound form does not seem to be active (By similarity).
CC -!- TISSUE SPECIFICITY: Expressed in sympathetic, motor, and sensory
CC neurons.
CC -!- DEVELOPMENTAL STAGE: Detected as early as 11 dpc. At 13 dpc
CC detected mainly in the nervous system. At 16 dpc, detected in the
CC brain, spinal cord, trigeminal, vestibular-cochlear, and spinal
CC ganglia. In adults, expressed in spinal cord, and numerous brain
CC regions.
CC -!- DOMAIN: The cytoplasmic domain may be involved in the regulation
CC of trafficking and proteolytic processing. Regulation of the
CC proteolytic processing involves initial intracellular domain
CC dimerization (By similarity).
CC -!- DOMAIN: ERBB receptor binding is elicited entirely by the EGF-like
CC domain (By similarity).
CC -!- PTM: Proteolytic cleavage close to the plasma membrane on the
CC external face leads to the release of the soluble growth factor
CC form (By similarity).
CC -!- PTM: Extensive glycosylation precedes the proteolytic cleavage (By
CC similarity).
CC -!- SIMILARITY: Belongs to the neuregulin family.
CC -!- SIMILARITY: Contains 1 EGF-like domain.
CC -----
CC This SWISS-PROT entry is copyright. It is produced through a collaboration
CC between the Swiss Institute of Bioinformatics and the EMBL Outstation -
CC the European Bioinformatics Institute. There are no restrictions on its

use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See <http://www.isb-sib.ch/announce/> or send an email to license@isb-sib.ch).

EMBL; AF010130; AAB70914.1; --

DR PIR; T44447; T44447.

DR HSSP; P01133; IJL9.

DR MGD; MGI:1097165; Nr3.

DR GO; GO:0005515; F:protein binding; IPI.

DR GO; GO:0007243; P:protein kinase cascade; IDA.

DR InterPro; IPR000742; EGF_2.

DR InterPro; IPR006209; EGF-like.

DR Pfam; PF00008; EGF_1.

DR PROSITE; PS00022; EGF_1; 1.

DR PROSITE; PS01186; EGF_2; 1.

DR PROSITE; PS50026; EGF_3; 1.

KW EGF-like domain; Growth factor; Multigene family; Transmembrane.

FT CHAIN 1 713

FT DOMAIN 1 361

FT TRANSMEM 1 362

FT DOMAIN 363 383

FT DOMAIN 384 713

FT DOMAIN 105 287

FT DOMAIN 288 331

FT DOMAIN 13 21

FT DOMAIN 26 34

FT DOMAIN 127 135

FT DOMAIN 250 253

FT DOMAIN 254 263

FT DOMAIN 264 267

FT DISULFID 292 306

FT DISULFID 300 319

FT DISULFID 321 330

SQ SEQUENCE 713 AA; 77369 MW; 9F7D1D5E7F68D6F0 CRC64;

Query Match 100.0%; Score 277; DB 1; Length 713;

Best Local Similarity 100.0%; Pred. No. 8.6e-26;

Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFKPCDKDLAYCLNDGECFVETLTGSHKRCCKEGYGVRCDOFL 47

DB 288 HFKPCDKDLAYCLNDGECFVETLTGSHKRCCKEGYGVRCDOFL 334

RESULT 2

NRG3_HUMAN STANDARD; PRT; 720 AA.

AC P56975;

DT 16-OCT-2001 (Rel. 40, Created)

DT 16-OCT-2001 (Rel. 40, Last sequence update)

DT 05-JUL-2004 (Rel. 44, Last annotation update)

DE Pro-neuregulin-3 precursor (Pro-NRG3) [Contains: Neuregulin-3 (NRG-3)].

GN Name=NRG3;

OS Homo sapiens (human).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Homiidae; Homo.

OC NCBI_TaxID=9606;

OX [1]

RN SEQUENCE FROM N.A.

RP TISSUE=fetal brain;

RX MEDLINE=97420720; PubMed=9275162; DOI=10.1073/pnas.94.18.9562; Zhang D., Sliwkowski M.X., Mark M., Prantz G., Akita R., Sun Y., Hillan K., Crowley C., Brush J., Godowski P.J.;

RA "Neuregulin-3 (NRG3): a novel neural tissue-enriched protein that binds and activates ErbB4";

RT binds and activates ErbB4";

RL Proc. Natl. Acad. Sci. U.S.A. 94:9562-9567(1997).

CC -!- FUNCTION: Direct ligand for the ERBB4 tyrosine kinase receptor. Binding results in ligand-stimulated tyrosine phosphorylation and activation of the receptor. Does not bind to the EGF receptor.

ERBB2 or ERBB3 receptors.

-!- SUBCELLULAR LOCATION: Exists as an type I membrane protein and as a proteolytically released soluble growth factor form. The membrane-bound form does not seem to be active (By similarity).

-!- TISSUE SPECIFICITY: Highly expressed in most regions of the brain with the exception of corpus callosum. Expressed at lower level in testis. Not detected in heart, placenta, lung, liver, skeletal muscle, kidney, pancreas, spleen, thymus, prostate, ovary, small intestine, colon and peripheral blood leukocytes.

-!- DOMAIN: The cytoplasmic domain may be involved in the regulation of trafficking and proteolytic processing. Regulation of the proteolytic processing involves initial intracellular domain dimerization (By similarity).

-!- DOMAIN: ERBB receptor binding is elicited entirely by the EGF-like domain (By similarity).

-!- PTM: Proteolytic cleavage close to the plasma membrane on the external face leads to the release of the soluble growth factor form (By similarity).

-!- PTM: Extensive glycosylation precedes the proteolytic cleavage (By similarity).

-!- SIMILARITY: belongs to the neuregulin family.

-!- SIMILARITY: Contains 1 EGF-like domain.

DR HSSP; P01133; IJL9.

DR Genew; HGNC:7999; NR3.

DR MIM: 605533; --

DR GO; GO:0005576; C:extracellular; NAS.

DR GO; GO:0005887; C:integral to plasma membrane; NAS.

DR GO; GO:0008083; F:growth factor activity; NAS.

DR GO; GO:0030297; F:transmembrane receptor protein tyrosine kin. . .; NAS.

DR GO; GO:0001558; P:regulation of cell growth; NAS.

DR GO; GO:0007170; P:transmembrane receptor protein tyrosine kin. . .; NAS.

DR InterPro; IPR000742; EGF_2.

DR InterPro; IPR006209; EGF-like.

DR InterPro; IPR006210; IEGF.

DR InterPro; IPR002154; Neuregulin.

DR Pfam; PF00008; EGF_1.

DR Pfam; PF02158; Neuregulin; 1.

DR SMART; SM00181; EGF_1.

DR PROSITE; PS00022; EGF_1; 1.

DR PROSITE; PS01186; EGF_2; 1.

DR PROSITE; PS50026; EGF_3; 1.

KW EGF-like domain; Growth factor; Multigene family; Transmembrane.

FT CHAIN 1 720

FT DOMAIN 1 359

FT TRANSMEM 361 360

FT DOMAIN 362 720

FT DOMAIN 105 285

FT DOMAIN 286 329

FT DOMAIN 5 8

FT DOMAIN 13 21

FT DOMAIN 26 34

FT DOMAIN 127 135

FT DOMAIN 252 260

FT DOMAIN 262 265

FT DISULFID 290 304

FT DISULFID 298 317

FT DISULFID 319 328

SQ SEQUENCE 720 AA; 77900 MW; A4D6F10DD95A693 CRC64;

Query Match 100.0%; Score 277; DB 1; Length 720;

Best Local Similarity 100.0%; Pred. No. 8.7e-26;

Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFKPCDKDLAYCLNDGECFVETLTGSHKRCCKEGYGVRCDOFL 47

DB 286 HFKPCDKDLAYCLNDGECFVETLTGSHKRCCKEGYGVRCDOFL 332

RESULT 3

NRG1_XENLA STANDARD; PRT; 677 AA.

ID NRG1_XENLA

AC O93383; Q9W6N0;


```

DR InterPro: IPR002154; Neuregulin.
DR Pfam: PF00008; EGF_1.
DR Pfam: PF00047; Ig_1.
DR Pfam: PF02158; Neuregulin; 1.
DR PRINTS: PRO1089; NEUREGULIN.
DR SMART: SM00181; EGF_1.
DR SMART: SM00409; IG_1.
DR SMART: SM00408; ICG2_1.
DR PROSITE: PS00022; EGF_1; 1.
DR PROSITE: PS01186; EGF_2; 1.
DR PROSITE: PS50026; EGF_3; 1.
DR PROSITE: PS50835; IG_Like; 1.
DR EGF-like domain.
KW NON_TER
FT NON_TER
SQ SEQUENCE 394 AA; 42980 MW; C183EB80927443F9 CRC64;

Query Match 41.0%; Score 113.5; DB 2; Length 394;
Best Local Similarity 34.8%; Pred. No. 9.1e-06;
Matches 16; Conservative 14; Mismatches 15; Indels 1; Gaps 1;

Qy 1 HFKPCRDKLAVCLNDGECFVETLTGSHKH-CRCKEGYGVRCQD 45
Db 169 HLVKCAEKETFCVNGGECFVWKDLSNPSRYLCKQCPGTGARCTE 214

RESULT 5
ID 035947 PRELIMINARY; PRT; 461 AA.
AC 035947;
DT 01-JAN-1998 (TREMBLrel. 05, Last sequence update)
DI 01-MAR-2004 (TREMBLrel. 26, Last annotation update)
DE Neuregulin.
OS Mesocricetus auratus (Golden hamster).
OC Eukaryota; Metazoa; Chordata; Cranialata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Cricetinae;
OC Mesocricetus.
OC NCBI_TaxId=10036;
RN [1]
RP SEQUENCE FROM N.A.
RA Velasco J.A., Feijoo B., Avila M.A., Notario V.;
RL Submitted (APR-1997) to the EMBL/GenBank/DBJ databases.
CC -1- SIMILARITY: Contains 1 EGF-like domain.
DR EMBL: U96612; AAB71812.1; -.
DR HSSP: Q12780; IHRF.
DR GO: GO:0005102; F:receptor binding; IEA.
DR GO: GO:0009790; P:embryonic development; IEA.
DR InterPro: IPR000742; EGF_2.
DR InterPro: IPR006209; EGF_Like.
DR InterPro: IPR006210; IEGF.
DR InterPro: IPR007110; Ig_Like.
DR InterPro: IPR003598; IG_c2.
DR InterPro: IPR002154; Neuregulin.
DR Pfam: PF00008; EGF_1.
DR Pfam: PF00047; Ig_1.
DR Pfam: PF02158; Neuregulin; 1.
DR PRINTS: PRO1089; NEUREGULIN.
DR SMART: SM00181; EGF_1.
DR SMART: SM00408; ICG2_1.
DR PROSITE: PS00022; EGF_1; 1.
DR PROSITE: PS01186; EGF_2; 1.
DR PROSITE: PS50026; EGF_3; 1.
DR PROSITE: PS50835; IG_Like; 1.
DR EGF-like domain.
KW EGF-like domain.
SQ SEQUENCE 461 AA; 50890 MW; 935C9560F7148336 CRC64;

Query Match 41.0%; Score 113.5; DB 2; Length 461;
Best Local Similarity 34.8%; Pred. No. 1.1e-05;
Matches 16; Conservative 14; Mismatches 15; Indels 1; Gaps 1;

Qy 1 HFKPCRDKLAVCLNDGECFVETLTGSHKH-CRCKEGYGVRCQD 45

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Db 178 HLVKCAEKETFCVNGGECFVWKDLSNPSRYLCKQCPGTGARCTE 223

RESULT 6
ID Q7RTW1 PRELIMINARY; PRT; 462 AA.
AC Q7RTW1;
DT 01-MAR-2004 (TREMBLrel. 26, Created)
DT 01-MAR-2004 (TREMBLrel. 26, Last sequence update)
DI 01-MAR-2004 (TREMBLrel. 26, Last annotation update)
DE Neuregulin 1 isoform ndt43.
GN Name=NRG1;
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Cranialata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Homnidae; Homo.
OC NCBI_TaxId=9606;
RN [1]
RP SEQUENCE FROM N.A.
RA PubMed=12145742;
RX Stefansson H., Sigurdsson E., Steinhorsdottir V., Bjornsdottir S.,
RA Stefansson T., Ghosh S., Brynjolfsson J., Gunnarsdottir S.,
RA Sigmundsson T., Chou T.T., Hjalason O., Bitgisdottir B., Jonsson H.,
RA Ivarsson O., Chou T.T., Hjalason O., Bitgisdottir B., Jonsson H.,
RA Gudnadottir V.G., Gudmundsdottir E., Bjornsson A., Ingvarsson B.,
RA Ingason A., Sigfusson S., Hardardottir H., Harvey R.P., Brunner D.,
RA Mutel V., Gonzalo A., Lemke G., Sainz J., Johannesson G.,
RA Andresson T., Gudbjartsson D., Manolescu A., Frigge M.L., Gurney M.E.,
RA Kong A., Gulcher J.R., Petrusson H., Stefansson K.;
RT "Neuregulin 1 and Susceptibility to Schizophrenia.";
RL Am. J. Hum. Genet. 71:0-0(2002).
CC -1- MISCELLANEOUS: The sequence shown here is derived from an
CC EMBL/GenBank/DBJ third party annotation (TPA) entry.
DR EMBL: BK000383; DAA0045.1; -.
DR HSSP: Q12780; IHRF.
DR GO: GO:0005102; F:receptor binding; IEA.
DR GO: GO:0009790; P:embryonic development; IEA.
DR InterPro: IPR000742; EGF_2.
DR InterPro: IPR006209; EGF_Like.
DR InterPro: IPR007110; Ig_Like.
DR InterPro: IPR002154; Neuregulin.
DR Pfam: PF00008; EGF_1.
DR Pfam: PF00047; Ig_1.
DR Pfam: PF02158; Neuregulin; 1.
DR PRINTS: PRO1089; NEUREGULIN.
DR PROSITE: PS00022; EGF_1; 1.
DR PROSITE: PS01186; EGF_2; 1.
DR PROSITE: PS50026; EGF_3; 1.
DR PROSITE: PS50835; IG_Like; 1.
SQ SEQUENCE 462 AA; 50848 MW; 8CAADB830056A80D CRC64;

Query Match 41.0%; Score 113.5; DB 2; Length 462;
Best Local Similarity 34.8%; Pred. No. 1.1e-05;
Matches 16; Conservative 14; Mismatches 15; Indels 1; Gaps 1;

Qy 1 HFKPCRDKLAVCLNDGECFVETLTGSHKH-CRCKEGYGVRCQD 45
Db 178 HLVKCAEKETFCVNGGECFVWKDLSNPSRYLCKQCPGTGARCTE 223

RESULT 7
NRG1 HUMAN
ID NRG1 HUMAN STANDARD; PRT; 639 AA.
AC 002297; 014667; P98202; 002298; 002299; 007110; 007111; Q12779;
AC Q12780; Q12781; Q12782; Q12783; Q12784; Q9UEB3;
DT 16-OCT-2001 (Rel. 40, Created)
DT 16-OCT-2001 (Rel. 40, Last sequence update)
DT 25-OCT-2004 (Rel. 45, Last annotation update)
DE Pro-neuregulin-1 precursor (Pro-NRG1) [Contains: Neuregulin-1 (Neu
DE differentiation factor) (Heregulin) (HRG) (Breast cancer cell
DE differentiation factor p45) (Acetylcholine receptor inducing activity)
DE (ARIN) (Sensory and motor neuron-derived factor) (Glial growth
DE factor)].
GN Name=NRG1; Synonyms=GSF, HGL, HRGA, NDF, SMDF;
OS Homo sapiens (Human).

```

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 CC Mammalia; Eutheria; Primates; Catarrhini; Homnidae; Homo.
 RX NCBI_TaxID=9606;
 RN [1]
 RP SEQUENCE FROM N.A. (ISOFORMS 1; 6; 7 AND 8), AND PARTIAL SEQUENCE.
 RX MEDLINE=92271253; PubMed=1350381;
 RA Holmes W.E., Sliwkowski M.X., Akita R.W., Henzel W.J., Lee J.,
 RA Park J.W., Yansura D., Abadi N., Raab H., Lewis G.D., Shepard H.M.,
 RA Kiang W.-J., Wood W.I., Goeddel D.V., Vanden R.L.,
 RT "Identification of heregulin, a specific activator of p185erbB2,"
 RL Science 256:1205-1210(1992).
 RN [2]
 RP SEQUENCE FROM N.A. (ISOFORMS 2; 3; 4; 6; 7 AND 8).
 RC TISSUE=Kidney adenocarcinoma, and pituitary;
 RX MEDLINE=94158663; PubMed=7509448;
 RA Men D., Suggs S.V., Karunagaran D., Liu N., Cupples R.L., Luo Y.,
 RA Jansen A.M., Ben-Baruch N., Trollinger D.B., Jacobsen V.L.,
 RA Meng S.-Y., Lu H.S., Hu S., Chang D., Yang W., Yanigahara D.,
 RA Koski R.A., Yarden Y.;
 RT "Structural and functional aspects of the multiplicity of Neu
 RT differentiation factors";
 RL Mol. Cell. Biol. 14:1909-1919(1994).
 RN [3]
 RP SEQUENCE FROM N.A. (ISOFORM 1).
 RX MEDLINE=92208945; PubMed=1348215; DOI=10.1016/0092-8674(92)90131-U;
 RA Peles E., Bacus S.S., Koski R.A., Lu H.S., Wen D., Ogden S.G.,
 RA Levy R.B., Yarden Y.;
 RT "Isolation of the neu/HER-2 stimulatory ligand: a 44 kd glycoprotein
 RT that induces differentiation of mammary tumor cells";
 RL Cell 69:205-216(1992).
 RN [4]
 RP SEQUENCE FROM N.A. (ISOFORMS 8 AND 9).
 RC TISSUE=Brain;
 RX MEDLINE=93205115; PubMed=8096067; DOI=10.1038/362312a0;
 RA Marchionni M.A., Goodheart A.D.J., Chen M.S., Bermingham-McDonogh O.,
 RA Kirk C., Hendricks M., Danehy F., Mitsum D., Sudhalter J.,
 RA Kobayashi K., Wroblewski D., Lynch C., Balasarte M., Hiles I.,
 RA Davis J.B., Hsuan J.J., Totty N.F., Otsu M., McBurney R.N.,
 RA Waterfield M.D., Stroobant P., Gwynne D.;
 RT "Glia growth factors are alternatively spliced erbB2 ligands
 RT expressed in the nervous system";
 RL Nature 362:312-318(1993).
 RN [5]
 RP SEQUENCE FROM N.A. OF GAMMA-HEREGULIN FUSION PROTEIN.
 RC TISSUE=Breast cancer;
 RX MEDLINE=97472144; PubMed=9333014; DOI=10.1038/sj.onc.1201317;
 RA Schaefer G., Fitzpatrick V.D., Sliwkowski M.X.;
 RT "Gamma-hergulin: a novel heregulin isoform that is an autocrine
 RT growth factor for the human breast cancer cell line, MDA-MB-175,"
 RL Oncogene 15:1385-1394(1997).
 RN [6]
 RP SEQUENCE OF 1-210 FROM N.A.
 RA Schoumacher F., Herzer S., Flury N., Kueng W., Mueller H.,
 RA Eppenberger U.;
 RL Submitted (SEP-1997) to the EMBL/GenBank/DBJ databases.
 RN [7]
 RP SEQUENCE OF 19-27.
 RX MEDLINE=93366731; PubMed=7689552;
 RA Clousson J.-M., Plowman G.W., Green J.M., Shoyab M.;
 RT "Characterization of a breast cancer cell differentiation factor that
 RT specifically activates the HER4/p180erbB4 receptor,"
 RL J. Biol. Chem. 268:18407-18410(1993).
 RN [8]
 RP CHROMOSOMAL TRANSLOCATION.
 RX MEDLINE=99455251; PubMed=10523851; DOI=10.1038/sj.onc.1202950;
 RA Wang X.-Z., Jolicoeur E.M., Conte N., Chaffanet M., Zhang Y.,
 RA Mozziconacci M.-J., Feiner H., Birbaum D., Pebunegue M.-J., Ron D.;
 RT "Gamma-hergulin is the product of a chromosomal translocation fusing
 RT the DCC4 and Hg1/NR1 genes in the MDA-MB-175 breast cancer cell
 RT line,"
 RL Oncogene 18:5718-5721(1999).
 RN [9]
 RP CHROMOSOMAL TRANSLOCATION.

RX MEDLINE=20065180; PubMed=10597312; DOI=10.1038/sj.onc.1203136;
 RA Liu X., Baker E., Eyre H.J., Sutherland G.R., Zhou M.;
 RT "Gamma-hergulin: a fusion gene of DCC-4 and heregulin-1 derived from
 RT a chromosome translocation,"
 RL Oncogene 18:7110-7114(1999).
 RN [10]
 RP STRUCTURE BY NMR OF 175-241 (ISOFORM 1).
 RX MEDLINE=94341264; PubMed=8062828;
 RA Nagata K., Kohda D., Hatanaka H., Ichikawa S., Matsuda S.,
 RA Yamamoto T., Suzuki A., Inagaki F.;
 RT "Solution structure of the epidermal growth factor-like domain of
 RT heregulin-alpha, a ligand for p180erbB-4,"
 RL EMO J. 13:3517-3523(1994).
 CC -1- FUNCTION: Direct ligand for ERBB3 and ERBB4 tyrosine kinase
 CC receptors. Concomitantly recruits ERBB3 and ERBB4 coreceptors,
 CC resulting in ligand-stimulated tyrosine phosphorylation and
 CC activation of the ERBB receptors. The multiple isoforms perform
 CC diverse functions such as inducing growth and differentiation of
 CC epithelial, glial, neuronal, and skeletal muscle cells; inducing
 CC expression of acetylcholine receptor in synaptic vesicles during
 CC the formation of the neuromuscular junction; stimulating
 CC lobuloalveolar budding and milk production in the mammary gland
 CC and inducing differentiation of mammary tumor cells; stimulating
 CC Schwann cell proliferation; implication in the development of the
 CC myocardium such as trabeculation of the developing heart.
 CC -1- SUBUNIT: The cytoplasmic domain interacts with the LIM domain
 CC region of LIMK1 (By similarity).
 CC -1- SUBCELLULAR LOCATION: Exists as an type I membrane protein and as
 CC a proteolytically released soluble growth factor form. The
 CC membrane-bound form does not seem to be active. The secreted
 CC isoform 9 has a signal peptide. The isoform 8 may be nuclear.
 CC -1- ALTERNATIVE PRODUCTS:
 CC Event=Alternative splicing; Named isoforms=9;
 CC Comment=Additional isoforms seem to exist. Isoforms have been
 CC classified as type I NRGs (isoforms with an Ig domain and a
 CC glycosylation domain, isoforms 1-8), type II NRGs (isoforms with
 CC an Ig domain but no glycosylation domain, isoform 9) and type
 CC III NRGs (isoforms with a Cys-rich domain, isoform 10). All
 CC these isoforms perform distinct tissue-specific functions;
 CC Name=1; Synonyms=Alpha;
 CC IsoId=Q02297-1; Sequence=Displayed;
 CC Name=2; Synonyms=Alpha1A;
 CC IsoId=Q02297-2; Sequence=VSP_003431;
 CC Name=3; Synonyms=Alpha2B;
 CC IsoId=Q02297-3; Sequence=VSP_003434, VSP_003435;
 CC Name=4; Synonyms=Alpha3;
 CC IsoId=Q02297-4; Sequence=VSP_003432, VSP_003433;
 CC Name=5; Synonyms=Beta1, Beta1A;
 CC IsoId=Q02297-6; Sequence=VSP_003428;
 CC Name=6; Synonyms=Beta2;
 CC IsoId=Q02297-7; Sequence=VSP_003427;
 CC Name=7; Synonyms=Beta3, GGFHRB1;
 CC IsoId=Q02297-8; Sequence=VSP_003429, VSP_003430;
 CC Name=8; Synonyms=GGF2, GGFHRP2;
 CC IsoId=Q02297-9; Sequence=VSP_003425, VSP_003426, VSP_003429,
 CC VSP_003430;
 CC Name=10; Synonyms=SMDF;
 CC IsoId=Q15491-1; Sequence=External;
 CC -1- TISSUE SPECIFICITY: Type I isoforms are the predominant forms
 CC expressed in the endocardium. Isoform alpha is expressed in
 CC breast, ovary, testis, prostate, heart, skeletal muscle, lung,
 CC placenta, liver, kidney, salivary gland, small intestine and brain,
 CC but not in uterus, stomach, pancreas, and spleen. Isoform 3 is the
 CC predominant form in mesenchymal cells and in nonneural organs,
 CC whereas isoform 5 is the major neuronal form. Isoform 8 is
 CC expressed in spinal cord and brain. Isoform 9 is the major form in
 CC skeletal muscle cells. In the nervous system it is expressed in
 CC spinal cord and brain. Also detected in adult heart, placenta,
 CC lung, liver, kidney, and pancreas.
 CC -1- DEVELOPMENTAL STAGE: Detectable at early embryonic ages.
 CC -1- DOMAIN: The cytoplasmic domain may be involved in the regulation
 CC of trafficking and proteolytic processing. Regulation of the
 CC proteolytic processing involves initial intracellular domain

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CC dimerization (By similarity).
CC -1- DOMAIN: ERBB receptor binding is elicited entirely by the EGF-like
CC domain.
CC -1- P-TM: Proteolytic cleavage close to the plasma membrane on the
CC external face leads to the release of the soluble growth factor
CC form.
CC -1- P-TM: Extensive glycosylation precedes the proteolytic cleavage (By
CC similarity).
CC -1- DISEASE: Involved in a rare t(8;11) chromosomal translocation that
CC fuses the 5' end of ODZ4 to NRG1 (isoform 8). The product of this
CC translocation was first thought to be an alternatively spliced
CC isoform, called gamma-hergulin. Gamma-hergulin is a soluble
CC activating ligand for the ERBB2-ERBB3 receptor complex and acts as
CC an autocrine growth factor in a specific breast cancer cell line
CC (MDA-MB-175). Not detected in breast carcinoma samples, including
CC ductal, lobular, medullary, and mucinous histological types,
CC neither in other breast cancer cell lines.
CC -1- SIMILARITY: Belongs to the neuregulin family.
CC -1- SIMILARITY: Contains 1 EGF-like domain.
CC -1- SIMILARITY: Contains 1 immunoglobulin-like C2-type domain.
CC -----
CC This SWISS-PROT entry is copyright. It is produced through a collaboration
CC between the Swiss Institute of Bioinformatics and the EMBL outstation-
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CC use by non-profit institutions as long as its content is in no way
CC modified and this statement is not removed. Usage by and for commercial
CC entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC or send an email to license@isb-sib.ch).
CC -----
CC EMBL; M94165; AAA58638.1; -
CC EMBL; M94166; AAA58639.1; -
CC EMBL; M94167; AAA58640.1; -
CC EMBL; M94168; AAA58641.1; -
CC EMBL; U02325; AAA19950.1; -
CC EMBL; U02326; AAA19951.1; -
CC EMBL; U02327; AAA19952.1; -
CC EMBL; U02328; AAA19953.1; -
CC EMBL; U02329; AAA19954.1; -
CC EMBL; U02330; AAA19955.1; -
CC EMBL; U12260; AAB59622.1; -
CC EMBL; U12261; AAB59358.1; -
CC -----
Query Match 41.0%; Score 113.5; DB 1; Length 639;
Best Local Similarity 34.8%; Pred. No. 1.5e-05;
Matches 16; Conservative 14; Mismatches 15; Indels 1; Gaps 1;

QY 1 HRPKCDKDLAVCLNDGECFVETLTGSHKH-CRCKEGVGVRCQD 45
DB 177 HLVKAEKERTPCVNGBCFVWVDLSNPSRYLCKQCPGFTGACTE 222

RESULT 8
QZRTV8 PRELIMINARY; PRT; 640 AA.
AC QZRTV8;
DT 01-MAR-2004 (TREMBLrel. 26, Created)
DT 01-MAR-2004 (TREMBLrel. 26, Last sequence update)
DE 01-MAR-2004 (TREMBLrel. 26, Last annotation update)
DE Neuregulin 1 isoform HRG-alpha.
GN Name=NRG1;
OS Homo sapiens (human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Homiidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RX PubMed=12145742;
RA Stefansson H., Sigurdsson E., Steinthorsdottir V., Bjornsdottir S.,
RA Sigurdsson T., Ghosh S., Brynjolfsson O., Gunnarsdottir S.,
RA Ivarsson O., Chou T.T., Hjalason O., Birgisdottir B., Jonsson H.,
RA Gudnadottir V.G., Gudmundsdottir E., Bjornsson A., Ingvarsson B.,
RA Ingason A., Sigfusson S., Hardardottir H., Harvey R.P., Brunner D.,
RA Mutel V., Gonzalo A., Lemke G., Sainz J., Johannesson G.,

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RA Andersson T., Gudbjartsson D., Manolescu A., Frigge M.L., Gurney M.E.,
RA Kong A., Gulcher J.R., Petursson H., Stefansson K.,
RT "Neuregulin 1 and Susceptibility to Schizophrenia.",
RL Am. J. Hum. Genet. 71:0-0(2002).
CC -1- MISCELLANEOUS: The sequence shown here is derived from an
CC EMBL/GenBank/DBJ third party annotation (TPA) entry.
CC EMBL; BK000383; DAA00048.1; -
CC HSSP; Q12780; IHRE.
CC GO; GO:0005102; F:receptor binding; IEA.
CC GO; GO:0009790; P:embryonic development; IEA.
CC InterPro; IPR000742; EGF_2.
CC InterPro; IPR006209; EGF_like.
CC InterPro; IPR007110; IG-like.
CC InterPro; IPR002154; Neuregulin.
CC Pfam; PF00008; EGF_1.
CC Pfam; PF00047; Ig_1.
CC PRINTS; PR01089; NEUREGULIN.
CC PROSITE; PS00022; EGF_1; 1.
CC PROSITE; PS01186; EGF_2; 1.
CC PROSITE; PS50026; EGF_3; 1.
CC PROSITE; PS50085; IG_Like; 1.
CC PROSITE; PS50835; IG_Like; 1.
SQ SEQUENCE 640 AA; 70361 MW; 11AFCS4B32527ACC CRC64;

Query Match 41.0%; Score 113.5; DB 2; Length 640;
Best Local Similarity 34.8%; Pred. No. 1.5e-05;
Matches 16; Conservative 14; Mismatches 15; Indels 1; Gaps 1;

QY 1 HRPKCDKDLAVCLNDGECFVETLTGSHKH-CRCKEGVGVRCQD 45
DB 178 HLVKAEKERTPCVNGBCFVWVDLSNPSRYLCKQCPGFTGACTE 223

RESULT 9
QZES49 PRELIMINARY; PRT; 298 AA.
AC QZES49;
DT 01-MAR-2001 (TREMBLrel. 16, Created)
DT 01-MAR-2001 (TREMBLrel. 16, Last sequence update)
DT 01-MAR-2004 (TREMBLrel. 26, Last annotation update)
DE SMDP neuregulin alpha 2b (Fragment).
GN Name=Ng1;
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX NCBI_TaxID=10116;
RN [1]
RP SEQUENCE FROM N.A.
RX STRAIN=BDIX;
RA Carroll S.L., Anderson K.D., Frohnert P.W.,
RL Submitted (OCT-1999) to the EMBL/GenBank/DBJ databases.
CC -1- SIMILARITY: Contains 1 EGF-like domain.
CC EMBL; AF194440; AAG28429.1; -
CC HSSP; Q12780; IHRE.
CC GO; GO:0005102; F:receptor binding; IEA.
CC GO; GO:0009790; P:embryonic development; IEA.
CC InterPro; IPR000742; EGF_2.
CC InterPro; IPR006209; EGF_like.
CC InterPro; IPR002114; Hpr_Serp_S.
CC InterPro; IPR006210; IEGF.
CC InterPro; IPR002154; Neuregulin.
CC Pfam; PF00008; EGF_1.
CC Pfam; PF02158; Neuregulin; 1.
CC PRINTS; PR01089; NEUREGULIN.
CC SMART; SM00181; EGF_1.
CC PROSITE; PS00022; EGF_1; 1.
CC PROSITE; PS01186; EGF_2; 1.
CC PROSITE; PS50026; EGF_3; 1.
CC PROSITE; PS50089; PTS_HPR_SER; UNKNOWN_1.
KW EGF-like domain.
FT NON_TER 1
FT NON_TER 298
SQ SEQUENCE 298 AA; 32851 MW; BD76F014C2B33026 CRC64;

```

Query Match 40.3%; Score 111.5; DB 2; Length 298;
 Best Local Similarity 34.8%; Pred. No. 1.2e-05;
 Matches 16; Conservative 13; Mismatches 16; Indels 1; Gaps 1;

Qy 1 HFKPCRDLDLAVCLNDECFVETLTGSHKH-CRCCKEYGVGRCDQ 45
 48 HLKCAKEKKEKFCVNGGECFTVKDLSNPSRYLCKQCPFTGARTCE 93

Db

RESULT 10

Q9ESB0 PRELIMINARY; PRT; 695 AA.

AC Q9ESB0; DT 01-MAR-2001 (Tremblrel). 16 Created
 DT 01-MAR-2001 (Tremblrel). 16 Last sequence update
 DT 01-MAR-2004 (Tremblrel). 26 Last annotation update
 DE SMDP neuregulin alpha 2a.
 GN Name=Nrg1;
 OS Rattus norvegicus (Rat).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
 OX NCBI_TaxID=10116;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC STRAIN=BDIX;
 RA Carroll S.L., Anderson K.D., Frohnert P.W.;
 RL Submitted (OCT-1999) to the EMBL/Genbank/DBJ databases.
 CC -1- SIMILARITY: Contains 1 EGF-like domain.
 DR EMBL: AF194439; AAC28428.1; -.
 DR HSSP: Q12780; IHRE.
 DR GO: GO:0005102; F:receptor binding; IEA.
 DR GO: GO:0009780; P:embryonic development; IEA.
 DR InterPro: IPR000742; EGF_2.
 DR InterPro: IPR006209; EGF_1like.
 DR InterPro: IPR002114; HPr_Serp_S.
 DR InterPro: IPR006210; IEGF.
 DR InterPro: IPR002154; Neuregulin.
 DE Pfam: PF00008; EGF_1.
 DE Pfam: PF02158; Neuregulin; 1.
 DE SMART: SM00181; EGF; 1.
 DR PROSITE: PS00022; EGF_1; 1.
 DR PROSITE: PS01186; EGF_2; 1.
 DR PROSITE: PS00026; EGF_3; 1.
 DR PROSITE: PS00589; PTS_HPR_SER; UNKNOWN_1.
 KM EGF-like domain.
 SQ SEQUENCE 695 AA; 75646 MW; 5277F2CBA2FB6878 CRC64;

Query Match 40.3%; Score 111.5; DB 2; Length 695;
 Best Local Similarity 34.8%; Pred. No. 2.8e-05;
 Matches 16; Conservative 13; Mismatches 16; Indels 1; Gaps 1;

Qy 1 HFKPCRDLDLAVCLNDECFVETLTGSHKH-CRCCKEYGVGRCDQ 45
 234 HLKCAKEKKEKFCVNGGECFTVKDLSNPSRYLCKQCPFTGARTCE 279

Db

RESULT 11

NRG4 MOUSE STANDARD; PRT; 115 AA.

AC Q9WTX4; DT 16-OCT-2001 (Rel. 40, Created)
 DT 16-OCT-2001 (Rel. 40, Last sequence update)
 DT 05-JUL-2004 (Rel. 44, Last annotation update)
 DE Pro-neuregulin-4, short isoform (Pro-NRG4) [Contains: Neuregulin-4
 (NRG-4)].
 GN Name=Nrg4;
 OS Mus musculus (Mouse).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
 OX NCBI_TaxID=10090;
 RN [1]

RP SEQUENCE FROM N.A.
 RC STRAIN=C57BL/6J; TISSUE=Liver;
 RX MEDLINE=99276098; PubMed=10348342; DOI=10.1038/651.0nc.1202631;
 RA Harari D., Tzahar E., Romano J., Shelly M., Pierce J.H., Andrews G.C.,
 RA Yarden Y.;
 RT "Neuregulin-4: a novel growth factor that acts through the ErbB-4
 receptor tyrosine kinase";
 RL Oncogene 18:2681-2689(1999).
 CC -1- FUNCTION: Low affinity ligand for the ERBB4 tyrosine kinase
 receptor. Concomitantly recruits ERBB1 and ERBB2 coreceptors,
 resulting in ligand-stimulated tyrosine phosphorylation and
 activation of the ERBB receptors. Does not bind to the ERBB1,
 ERBB2 and ERBB3 receptors.
 CC -1- SUBCELLULAR LOCATION: Exists as an type I membrane protein and as
 a membrane-bound form does not seem to be active (By similarity).
 CC -1- ALTERNATIVE PRODCUTS:
 CC Event=Alternative splicing; Named isoforms=1;
 CC Comment=At least 3 isoforms may be produced;
 CC Name=1;
 CC IsoId=Q9WTX4-1; Sequence=Displayed;
 CC -1- TISSUE SPECIFICITY: Highly expressed in pancreas; weakly expressed
 in muscle.
 CC -1- DOMAIN: The cytoplasmic domain may be involved in the regulation
 of trafficking and proteolytic processing. Regulation of the
 proteolytic processing involves initial intracellular domain
 dimerization (By similarity).
 CC -1- DOMAIN: ERBB receptor binding is elicited entirely by the EGF-like
 domain (By similarity).
 CC -1- PTM: Proteolytic cleavage close to the plasma membrane on the
 external face leads to the release of the soluble growth factor
 form (By similarity).
 CC -1- PTM: Extensive glycosylation precedes the proteolytic cleavage (By
 similarity).
 CC -1- SIMILARITY: Belongs to the neuregulin family.
 CC -1- SIMILARITY: Contains 1 EGF-like domain.
 CC -----
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 entities requires a license agreement (See <http://www.isb-sib.ch/announce/>
 or send an email to license@isb-sib.ch).
 CC -----
 DR EMBL: AF083067; AAD21874.1; -.
 DR HSSP: Q12780; IHRE.
 DR MGD: MGI:193383; Nrg4.
 DR InterPro: IPR001336; Nrg4.
 DR InterPro: IPR000742; EGF_1.
 DR InterPro: IPR006209; EGF_1like.
 DR InterPro: IPR006210; IEGF.
 DR Pfam: PF00008; EGF; 1.
 DR PRINTS: PR00009; EGFPTG.
 DR SMART: SM00181; EGF; 1.
 DR PROSITE: PS00022; EGF_1; 1.
 DR PROSITE: PS01186; EGF_2; FALSE_NEG.
 DR PROSITE: PS00026; EGF_3; 1.
 DR Alternative splicing; EGF-like domain; Glycoprotein; Growth factor;
 KW Multigene family; Transmembrane.
 FT CHAIN 1..115
 FT CHAIN 1..61
 FT DOMAIN 1..62
 FT TRANSMEM 63..83
 FT DOMAIN 84..115
 FT DOMAIN 5..46
 FT DISULFID 9..23
 FT DISULFID 17..34
 FT DISULFID 36..45
 FT CARBOHYD 39..39
 FT CARBOHYD 60
 SQ SEQUENCE 115 AA; 12743 MW; 989A1E376F857B49 CRC64;

Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).

Query Match

Best Local Similarity 37.7%; Score 104.5; DB 2; Length 241;

Best Local Similarity 31.2%; Pred. No. 7.2e-05;

Matches 15; Conservative 14; Mismatches 18; Indels 1; Gaps 1;

1 HFKPCRDKLAVCLNDECFVITLTGSHKH-CRCKEGYGVRCDOFL 47

178 HLVKCAKEKTCFVNGECFVNVKDLSPNSRYLCKCPNEFTGDRCONV 225

RESULT 14

AC - O7RTW0 PRELIMINARY; PRT; 241 AA.

AC - O7RTW0:

01-MAR-2004 (TREMBlrel. 26, Created)

01-MAR-2004 (TREMBlrel. 26, Last sequence update)

01-MAR-2004 (TREMBlrel. 26, Last annotation update)

Neuregulin 1 isoform GGF (Neuregulin 1 isoform hrg-beta3).

Name=NRG1;

Homo sapiens (Human).

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Mammalia; Eutheria; Primates; Catarrhini; Homnidae; Homo.

NCBI_TaxID=9606;

[1]

SEQUENCE FROM N.A.

PubMed=12145742;

Stefansson H., Sigurdsson E., Steinthorsdottir V., Bjornsdottir S.,

Sigmundsson T., Ghosh S., Brynjolfsson J., Gunnarsson S.,

Ivarsson O., Chou T.T., Hjalton O., Birgisdottir B., Jonsson H.,

Gudnadottir V.G., Gudmundsdottir E., Bjornsson A., Ingvarsson B.,

Ingason A., Sigfusson S., Hardardottir H., Harvey R.P., Brunner D.,

Mutel V., Gonzalo A., Lemke G., Sainz J., Johannesson G.,

Andersson T., Gudbjartsson D., Nandjescu A., Frigge M.L., Gurney M.E.,

Kong A., Gulcher J.R., Petursson H., Stefansson K.;

Neuregulin 1 and Susceptibility to Schizophrenia.;

Am. J. Hum. Genet. 71:0-0(2002).

CC - MISCELLANEOUS: The sequence shown here is derived from an

EMBL/GenBank/DBJ third party annotation (TPA) entry.

EMBL: BK000383; DAA00046.1; -.

HSSP: Q12780; IHR.

InterPro: IPR000742; EGF_2.

InterPro: IPR006209; EGF_1like.

InterPro: IPR007110; IG-like.

Pfam: PF00008; EGF_1.

Pfam: PF00047; IG_1.

PROSITE: PS00022; EGF_1; UNKNOWN_1.

PROSITE: PS50026; EGF_3; 1.

PROSITE: PS50835; IG-like; 1.

SEQUENCE 241 AA; 26142 MW; D2450DB3406B6AD CRC64;

Query Match

Best Local Similarity 37.7%; Score 104.5; DB 2; Length 241;

Best Local Similarity 31.2%; Pred. No. 7.2e-05;

Matches 15; Conservative 14; Mismatches 18; Indels 1; Gaps 1;

1 HFKPCRDKLAVCLNDECFVITLTGSHKH-CRCKEGYGVRCDOFL 47

178 HLVKCAKEKTCFVNGECFVNVKDLSPNSRYLCKCPNEFTGDRCONV 225

RESULT 15

AC - O07112 PRELIMINARY; PRT; 241 AA.

AC - O07112:

01-JAN-1998 (TREMBlrel. 05, Created)

01-JAN-1998 (TREMBlrel. 05, Last sequence update)

01-MAR-2004 (TREMBlrel. 26, Last annotation update)

Glial growth factor.

Name=GFAPP5; Synonyms=neuregulin;

Bos taurus (Bovine).

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;

Bovinae; Bos.

NCBI_TaxID=9913;

[1]

SEQUENCE FROM N.A.

TISSUE=Posterior pituitary;

MEDLINE=3205115; PubMed=8096067; DOI=10.1038/362312a0;

Marchionni M.A., Goodearl A.D.G., Chen M., Bermingham-McDonogh O.,

Kirk C., Hendricks M., Danehy F., Misumi D., Sudhalter J.,

Kobayashi K., Wroblewski D., Lynch C., Baldaire M., Hiles I.,

Waterfield M.D., Stroobant P., Gwynne D.;

"Glial growth factors are alternatively spliced erbB2 ligands

expressed in the nervous system.";

Nature 362:312-318(1993).

-1- SIMILARITY: Contains 1 EGF-like domain.

EMBL: L12259; AAA30540.1; -.

PIR: S32359; S32359.

HSSP: Q12780; IHR.

InterPro: IPR000742; EGF_2.

InterPro: IPR006209; EGF_1like.

InterPro: IPR006210; IEGF.

InterPro: IPR007110; IG-like.

InterPro: IPR003598; IG_c2.

Pfam: PF00047; EGF_1.

Pfam: PF00048; IG_1.

SMART: SM00408; IGC2; 1.

PROSITE: PS00022; EGF_1; UNKNOWN_1.

PROSITE: PS01186; EGF_2; FALSE_NEG.

PROSITE: PS50026; EGF_3; 1.

PROSITE: PS50835; IG-like; 1.

EGF-like domain.

SEQUENCE 241 AA; 25955 MW; BF571297E8DA9796 CRC64;

Query Match

Best Local Similarity 37.7%; Score 104.5; DB 2; Length 241;

Best Local Similarity 31.2%; Pred. No. 7.2e-05;

Matches 15; Conservative 14; Mismatches 18; Indels 1; Gaps 1;

1 HFKPCRDKLAVCLNDECFVITLTGSHKH-CRCKEGYGVRCDOFL 47

178 HLVKCAKEKTCFVNGECFVNVKDLSPNSRYLCKCPNEFTGDRCONV 225

Search completed: May 4, 2005, 12:07:05

Job time : 177 secs

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GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: May 4, 2005, 11:55:41 ; Search time 39 Seconds
(without alignments)
115.954 Million cell updates/sec

Title: US-09-107-979-4
Perfect score: 277
Sequence: 1 HFKPCRDKLAYCLNDECFVIELTGS...SHKRCCKEGYGVRCDFL 47

Scoring table: BIOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283416 seqs, 96216763 residues

Total number of hits satisfying chosen parameters: 283416

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%

Listing first 45 summaries

Database : PIR 79:.*
1: pir1:.*
2: pir2:.*
3: pir3:.*
4: pir4:.*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	277	100.0	713	2 T44447	neuregulin-3 [impo
2	113.5	41.0	125	2 I38405	neu differentiatio
3	113.5	41.0	462	2 I38404	neu differentiatio
4	113.5	41.0	640	2 A43273	heregulin precurs
5	111.5	40.3	639	2 I61719	neu differentiatio
6	105.5	38.1	125	2 S62676	heregulin isoform
7	104.5	37.7	175	2 I38408	neu differentiatio
8	104.5	37.7	241	2 D43273	heregulin precurs
9	104.5	37.7	241	2 S32359	glial growth facto
10	104.5	37.7	296	2 A56943	sensory/motor neur
11	104.5	37.7	422	2 S32357	glial growth facto
12	104.5	37.7	637	2 C43273	heregulin precurs
13	104.5	37.7	645	2 B43273	heregulin, splice
14	102.5	37.0	230	2 A56210	neu differentiatio
15	102.5	37.0	636	2 I61718	neu differentiatio
16	102.5	37.0	662	2 I61722	neu differentiatio
17	98.5	35.6	602	2 A45769	acetylcholine rece
18	92.5	33.4	2180	2 T29764	hypothetical prote
19	90	32.5	850	2 JCS700	EBDB kinase activa
20	90	32.5	860	2 JCS702	EBDB kinase activa
21	90	32.5	868	2 JCS701	EBDB kinase activa
22	85	30.7	80	1 EGVZSF	growth factor - ra
23	84.5	30.5	1220	2 A56136	growth factor - ra
24	83	30.0	46	2 JCS704	epiregulin - rat
25	83	30.0	162	2 S68401	epiregulin precurs
26	83	30.0	861	2 A48825	Notch homolog Notc
27	83	30.0	2531	2 A46019	Notch-1 protein -
28	82.5	29.8	177	2 A37408	betacellulin precu
29	82	29.6	85	1 EGVZM1	growth factor - my

30	82	29.6	230	2 A44074	probable EGF-like
31	82	29.6	264	2 T22380	hypothetical prote
32	80.5	29.1	178	2 JCS1467	betacellulin precu
33	80	28.9	907	2 T27317	hypothetical prote
34	79.5	28.7	140	1 MNV29	growth factor - va
35	79.5	28.7	140	1 T30766	growth factor - va
36	79.5	28.7	142	1 MNV23C	growth factor - va
37	79.5	28.7	152	1 S27195	transforming growt
38	79.5	28.7	159	1 MPR11	transforming growt
39	79.5	28.7	159	1 I57497	transforming growt
40	79	28.5	2531	2 S18188	notch protein homo
41	78	28.2	1207	1 EGHU	epidermal growth f
42	77.5	28.0	722	1 I48324	DEIRA-like 1 - mou
43	77.5	28.0	2352	2 T30201	Notch homolog prot
44	76.5	27.6	1372	2 T25933	hypothetical prote
45	76	27.4	482	2 JCS092	E-selectin - pig

ALIGNMENTS

bad date

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RESULT 1
T44447
C/Species: Mus musculus (house mouse)
C/Date: 21-Jan-2000 #sequence_revision 21-Jan-2000 #text_change 09-Jul-2004
C/Accession: T44447
R/Zhang, D.; Sliwkowski, M.X.; Mark, M.; Frantz, G.; Akita, R.; Sun, Y.; Hillan, K.; Cro
Proc. Natl. Acad. Sci. U.S.A. 94, 9562-9567, 1997
A/Title: Neuregulin-3 (NRG3): A novel neural tissue-enriched protein that binds and activ
A/Reference number: 222773; PMID:97420720; PMID:9275162
A/Accession: T44447
A/Status: preliminary; translated from GB/EMBL/DBJ
A/Molecule type: mRNA
A/Residues: 1-713 <ZHA>
A/Cross-references: UNIPROT:O35181; EMBL:AF010130; NID:g2429163; PIDN:AAB70914.1; PID:g24
C/Genetics:
A/Gene: NRG3
C/Superfamily: mouse neuregulin-3

Query Match 100.0%; Score 277; DB 2; Length 713;
Best Local Similarity 100.0%; Pred. No. 6.9e-24;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Cy 1 HFKPCRDKLAYCLNDECFVIELTGS...SHKRCCKEGYGVRCDFL 47
Db 288 HFKPCRDKLAYCLNDECFVIELTGS...SHKRCCKEGYGVRCDFL 334

RESULT 2
I38405
C/Species: Homo sapiens (man)
C/Date: 29-May-1998 #sequence_revision 29-May-1998 #text_change 08-Sep-2002
C/Accession: I38405
R/Men, D.; Sungs, S.V.; Karmunagan, D.; Liu, N.; Cupples, R.L.; Luo, Y.; Janssen, A.M.;
Mol. Cell. Biol. 14, 1909-1919, 1994
A/Title: Structural and functional aspects of the multiplicity of Neu differentiation fac
A/Reference number: A56210; PMID:94158863; PMID:7509448
A/Accession: I38405
A/Status: preliminary; translated from GB/EMBL/DBJ
A/Molecule type: mRNA
A/Residues: 1-125 <RES>
A/Cross-references: EMBL:U02327; NID:g408404; PIDN:AAA19952.1; PID:g408405
C/Superfamily: human heregulin; EGF homology; immunoglobulin homology

Query Match 41.0%; Score 113.5; DB 2; Length 125;
Best Local Similarity 34.8%; Pred. No. 5.9e-06;
Matches 16; Conservative 14; Mismatches 15; Indels 1; Gaps 1;

Cy 1 HFKPCRDKLAYCLNDECFVIELTGS...SHKRCCKEGYGVRCDFL 45
Db 56 HFKPCRDKLAYCLNDECFVIELTGS...SHKRCCKEGYGVRCDFL 101
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A/Residues: 1-6/7-16/17-30/31-38/39-58/59-92/93-120/121-125 <HAR>
C/Superfamily: human heregulin; EGF homology; immunoglobulin homology
C/Keywords: proto-oncogene

Query Match 38.1%; Score 105.5; DB 2; Length 125;
Best Local Similarity 32.6%; Pred. No. 4.8e-05;
Matches 15; Conservative 14; Mismatches 16; Indels 1; Gaps 1;

Qy 1 HFKPCRDKLAVCLNDGECFVIEITLTSNKH-CRCKEGYGVRCDOFL 45
Db 75 HLVKCAEKETFCVNGGECFVMDLSPNSRYLCKCPNEFTGDRCONV 120

RESULT 7

neu differentiation factor - human (fragment)
C/Species: Homo sapiens (man)
C/Date: 29-May-1998 #sequence_revision 29-May-1998 #text_change 08-Sep-2002
C/Accession: S32408

R/Man, D.; Suggs, S.V.; Karunakaran, D.; Liu, N.; Cupples, R.L.; Luo, Y.; Janssen, A.M.;
Mol. Cell. Biol. 14, 1909-1919, 1994
A/Title: Structural and functional aspects of the multiplicity of Neu differentiation fa
A/Reference number: A56210; MUID:94158863; PMID:7509448
A/Accession: S32408

A/Status: preliminary; translated from GB/EMBL/DBJ
A/Molecule type: mRNA
A/Residues: 1-175 <RES>

A/Cross-references: EMBL:U02330; NID:G408410; PIDN:AAA19955.1; PID:G408411
C/Superfamily: human heregulin; EGF homology; immunoglobulin homology
F/116-155/Domain: EGF homology <EGF>

Query Match 37.7%; Score 104.5; DB 2; Length 175;
Best Local Similarity 31.2%; Pred. No. 8.3e-05;
Matches 15; Conservative 14; Mismatches 18; Indels 1; Gaps 1;

Qy 1 HFKPCRDKLAVCLNDGECFVIEITLTSNKH-CRCKEGYGVRCDOFL 47
Db 112 HLVKCAEKETFCVNGGECFVMDLSPNSRYLCKCPNEFTGDRCONV 159

RESULT 8

D43273
heregulin precursor, splice form beta-3 - human

N/Alternate names: glial growth factor HRG-beta-3; neuregulin
C/Species: Homo sapiens (man)
C/Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 09-Jul-2004
C/Accession: D43273; S32358

R/Holmes, W.E.; Sliwkowski, M.X.; Akita, R.W.; Henzel, W.J.; Lee, J.; Park, J.W.; Yansur
Science 256, 1205-1210, 1992
A/Title: Identification of heregulin, a specific activator of p185(erbB2).
A/Reference number: A43273; MUID:92271253; PMID:1350381
A/Accession: D43273

A/Status: preliminary; nucleic acid sequence not shown; not compared with conceptual tra
A/Molecule type: mRNA
A/Residues: 1-241 <HOL>

A/Cross-references: UNIPROT:Q02297
R/Marchionni, M.A.; Goodearl, A.D.J.; Chen, M.S.; Birmingham-McDonogh, O.; Kirk, C.; Hen
les, I.; Davis, J.B.; Heuan, J.J.; Totty, N.F.; Otsu, M.; McBurney, R.N.; Waterfield, M.
Nature 362, 312-318, 1993

A/Title: Glial growth factors are alternatively spliced erbB2 ligands expressed in the r
A/Reference number: S32357; MUID:93205115; PMID:8096067
A/Accession: S32358

A/Molecule type: mRNA
A/Residues: 1-241 <MAR>
A/Cross-references: GB:L1261; NID:G292049; PIDN:AA859358.1; PID:G292050
C/Genetics:

A/Gene: GDB:HGL; GGF
A/Cross-references: GDB:132656; OMIM:142445
A/Map position: BP22-8p11
C/Superfamily: human heregulin; EGF homology; immunoglobulin homology
C/Keywords: alternative splicing
F/182-221/Domain: EGF homology <EGF>

Query Match 37.7%; Score 104.5; DB 2; Length 241;
Best Local Similarity 31.2%; Pred. No. 0.00011;
Matches 15; Conservative 14; Mismatches 18; Indels 1; Gaps 1;

Qy 1 HFKPCRDKLAVCLNDGECFVIEITLTSNKH-CRCKEGYGVRCDOFL 47
Db 178 HLVKCAEKETFCVNGGECFVMDLSPNSRYLCKCPNEFTGDRCONV 225

RESULT 9

S32359
glial growth factor - bovine

C/Species: Bos primigenius taurus (cattle)
C/Date: 19-Mar-1997 #sequence_revision 01-Aug-1997 #text_change 09-Jul-2004
C/Accession: S32359

R/Marchionni, M.A.; Goodearl, A.D.J.; Chen, M.S.; Birmingham-McDonogh, O.; Kirk, C.; Hen
les, I.; Davis, J.B.; Heuan, J.J.; Totty, N.F.; Otsu, M.; McBurney, R.N.; Waterfield, M.
Nature 362, 312-318, 1993

A/Title: Glial growth factors are alternatively spliced erbB2 ligands expressed in the ne
A/Reference number: S32357; MUID:93205115; PMID:8096067
A/Accession: S32359

A/Status: preliminary
A/Molecule type: mRNA
A/Residues: 1-241 <MAR>
A/Cross-references: UNIPROT:Q07112; GB:L1259; NID:G289413; PIDN:AAA30540.1; PID:G289414
F/182-221/Domain: EGF homology <EGF>

Query Match 37.7%; Score 104.5; DB 2; Length 241;
Best Local Similarity 31.2%; Pred. No. 0.00011;
Matches 15; Conservative 14; Mismatches 18; Indels 1; Gaps 1;

Qy 1 HFKPCRDKLAVCLNDGECFVIEITLTSNKH-CRCKEGYGVRCDOFL 47
Db 178 HLVKCAEKETFCVNGGECFVMDLSPNSRYLCKCPNEFTGDRCONV 225

RESULT 10

A56943
sensory/motor neuron-derived factor - human

C/Species: Homo sapiens (man)
C/Date: 18-Aug-1995 #sequence_revision 18-Aug-1995 #text_change 09-Jul-2004
C/Accession: A56943

R/Ho, W.H.; Armanini, M.P.; Nijens, A.; Phillips, H.S.; Osheroff, P.L.
J. Biol. Chem. 270, 14523-14532, 1995
A/Title: Sensory and motor neuron-derived factor. A novel heregulin variant highly expres
A/Reference number: A56943; MUID:95301541; PMID:7782315
A/Accession: A56943

A/Status: preliminary; not compared with conceptual translation
A/Molecule type: mRNA
A/Residues: 1-296 <HOA>
A/Cross-references: UNIPROT:Q15491; GB:L41827; NID:G862422; PIDN:AA41764.1; PID:G862423
C/Superfamily: human heregulin; EGF homology; immunoglobulin homology
F/237-276/Domain: EGF homology <EGF>

Query Match 37.7%; Score 104.5; DB 2; Length 296;
Best Local Similarity 31.2%; Pred. No. 0.00013;
Matches 15; Conservative 14; Mismatches 18; Indels 1; Gaps 1;

Qy 1 HFKPCRDKLAVCLNDGECFVIEITLTSNKH-CRCKEGYGVRCDOFL 47
Db 233 HLVKCAEKETFCVNGGECFVMDLSPNSRYLCKCPNEFTGDRCONV 280

RESULT 11

S32357
glial growth factor - human

C/Species: Homo sapiens (man)
C/Date: 02-Dec-1993 #sequence_revision 10-Nov-1995 #text_change 08-Sep-2002
C/Accession: S32357

R/Marchionni, M.A.; Goodearl, A.D.J.; Chen, M.S.; Birmingham-McDonogh, O.; Kirk, C.; Hen
les, I.; Davis, J.B.; Heuan, J.J.; Totty, N.F.; Otsu, M.; McBurney, R.N.; Waterfield, M.
Nature 362, 312-318, 1993

A/Title: Glial growth factors are alternatively spliced erbB2 ligands expressed in the h
A/Reference number: S32357; MUID:93205115; PMID:8096067
A/Accession: S32357
A/Status: preliminary
A/Molecule type: mRNA
A/Residues: 1-422 <MAR>
A/Cross-references: GB:112260; NID:9292047; PIDN:AA59622.1; PID:9292048
C/Superfamily: human heregulin; EGF homology; immunoglobulin homology
F:363-402/Domain: EGF homology <EGF>

Query Match 37.7%; Score 104.5; DB 2; Length 422;
Best Local Similarity 31.2%; Pred. No. 0.00018;
Matches 15; Conservative 14; Mismatches 18; Indels 1; Gaps 1;

Qy 1 HFKPCRDKLAYCLNDGECFVIEITLGSKH-CRCKEGYGVRCDOFL 47
Db 359 HLVKCAEKETFCVNGGECFVWYKDLNPSRYLCKCPNEFTGRCONYV 406

RESULT 12
C43273
heregulin precursor, splice form beta-2 - human
C/Species: Homo sapiens (man)
C/Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 08-Sep-2002
C/Accession: C43273; 138407
R/Holmes, W.E.; Sliwkowski, M.X.; Akita, R.W.; Henzel, W.J.; Lee, J.; Park, J.W.; Yansu
Science 256, 1205-1210, 1992
A/Title: Identification of heregulin, a specific activator of p185(erbB2).
A/Reference number: A43273; MUID:92271253; PMID:1350381
A/Accession: C43273
A/Status: preliminary; nucleic acid sequence not shown; not compared with conceptual tra
A/Molecule type: mRNA
A/Residues: 1-637 <HOL>
R/Holmes, W.E.; Sliwkowski, M.X.; Akita, R.W.; Henzel, W.J.; Lee, J.; Park, J.W.; Yansu
Mol. Cell. Biol. 14, 1909-1919, 1994
A/Title: Structural and functional aspects of the multiplicity of Neu differentiation fa
A/Reference number: A56210; MUID:94158863; PMID:7509448
A/Accession: 138407
A/Status: preliminary; translated from GB/EMBL/DBJ
A/Molecule type: mRNA
A/Residues: 119-406 <RES>
A/Cross-references: EMBL:U02329; NID:9408408; PIDN:AAA19954.1; PID:9408409
C/Genetics:
A/Gene: GDB:HGL
A/Cross-references: GDB:132656; OMIM:142445
A/Map position: 8p22-8p11
C/Superfamily: human heregulin; EGF homology; immunoglobulin homology
C/Keywords: alternative splicing
F:182-221/Domain: EGF homology <EGF>

Query Match 37.7%; Score 104.5; DB 2; Length 637;
Best Local Similarity 31.2%; Pred. No. 0.00025;
Matches 15; Conservative 14; Mismatches 18; Indels 1; Gaps 1;

Qy 1 HFKPCRDKLAYCLNDGECFVIEITLGSKH-CRCKEGYGVRCDOFL 47
Db 178 HLVKCAEKETFCVNGGECFVWYKDLNPSRYLCKCPNEFTGRCONYV 225

RESULT 13
B43273
heregulin, splice form beta 1 - human
C/Species: Homo sapiens (man)
C/Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 09-Jul-2004
C/Accession: B43273; 138406
R/Holmes, W.E.; Sliwkowski, M.X.; Akita, R.W.; Henzel, W.J.; Lee, J.; Park, J.W.; Yansu
Science 256, 1205-1210, 1992
A/Title: Identification of heregulin, a specific activator of p185(erbB2).
A/Reference number: A43273; MUID:92271253; PMID:1350381
A/Accession: B43273
A/Status: preliminary; nucleic acid sequence not shown; not compared with conceptual tra
A/Molecule type: mRNA
A/Residues: 1-645 <HOL>

A/Cross-references: UNIPROT:Q02297
R/Holmes, W.E.; Sliwkowski, M.X.; Akita, R.W.; Henzel, W.J.; Lee, J.; Park, J.W.; Yansu
Mol. Cell. Biol. 14, 1909-1919, 1994
A/Title: Structural and functional aspects of the multiplicity of Neu differentiation fac
A/Reference number: A56210; MUID:94158863; PMID:7509448
A/Accession: 138406
A/Status: preliminary; translated from GB/EMBL/DBJ
A/Molecule type: mRNA
A/Residues: 'A', 95-418, 'F', 420-645 <RES>
A/Cross-references: EMBL:U02328; NID:9408406; PIDN:AAA19953.1; PID:9408407
C/Genetics:
A/Gene: GDB:HGL
A/Cross-references: GDB:132656; OMIM:142445
A/Map position: 8p22-8p11
C/Superfamily: human heregulin; EGF homology; immunoglobulin homology
C/Keywords: alternative splicing
F:182-221/Domain: EGF homology <EGF>

Query Match 37.7%; Score 104.5; DB 2; Length 645;
Best Local Similarity 31.2%; Pred. No. 0.00025;
Matches 15; Conservative 14; Mismatches 18; Indels 1; Gaps 1;

Qy 1 HFKPCRDKLAYCLNDGECFVIEITLGSKH-CRCKEGYGVRCDOFL 47
Db 178 HLVKCAEKETFCVNGGECFVWYKDLNPSRYLCKCPNEFTGRCONYV 225

RESULT 14
A56210
neu differentiation factor - rat (fragment)
C/Species: Rattus norvegicus (Norway rat)
C/Date: 02-Jul-1996 #sequence_revision 02-Jul-1996 #text_change 08-Sep-2002
C/Accession: A56210
R/Holmes, W.E.; Sliwkowski, M.X.; Akita, R.W.; Henzel, W.J.; Lee, J.; Park, J.W.; Yansu
Mol. Cell. Biol. 14, 1909-1919, 1994
A/Title: Structural and functional aspects of the multiplicity of Neu differentiation fac
A/Reference number: A56210; MUID:94158863; PMID:7509448
A/Accession: A56210
A/Status: preliminary; translated from GB/EMBL/DBJ
A/Molecule type: mRNA
A/Residues: 1-230 <RES>
A/Cross-references: EMBL:U02315; NID:9408380; PIDN:AAA19940.1; PID:9408381
C/Superfamily: human heregulin; EGF homology; immunoglobulin homology

Query Match 37.0%; Score 102.5; DB 2; Length 230;
Best Local Similarity 31.2%; Pred. No. 0.00018;
Matches 15; Conservative 13; Mismatches 19; Indels 1; Gaps 1;

Qy 1 HFKPCRDKLAYCLNDGECFVIEITLGSKH-CRCKEGYGVRCDOFL 47
Db 167 HLVKCAEKETFCVNGGECFVWYKDLNPSRYLCKCPNEFTGRCONYV 214

RESULT 15
I61718
neu differentiation factor - rat
C/Species: Rattus norvegicus (Norway rat)
C/Date: 29-May-1998 #sequence_revision 29-May-1998 #text_change 09-Jul-2004
C/Accession: I61718; 161721; 161720
R/Holmes, W.E.; Sliwkowski, M.X.; Akita, R.W.; Henzel, W.J.; Lee, J.; Park, J.W.; Yansu
Mol. Cell. Biol. 14, 1909-1919, 1994
A/Title: Structural and functional aspects of the multiplicity of Neu differentiation fac
A/Reference number: A56210; MUID:94158863; PMID:7509448
A/Accession: I61718
A/Status: preliminary; translated from GB/EMBL/DBJ
A/Molecule type: mRNA
A/Residues: 1-636 <RES>
A/Cross-references: UNIPROT:P43322; EMBL:U02318; NID:9408386; PIDN:AAA19943.1; PID:9408386
A/Accession: I61721
A/Status: preliminary; translated from GB/EMBL/DBJ
A/Molecule type: mRNA
A/Residues: 1-444, 'A', 446-636 <RES>
A/Cross-references: EMBL:U02321; NID:9408392; PIDN:AAA19946.1; PID:9408393

A:Accession: I61720
 A:Status: preliminary; translated from GB/EMBL/DBJ
 A:Molecule type: mRNA
 A:Residues: 1-298,386,'V',388,'TR',391 <RE3>
 A:Cross-references: EMBL:U02320; NID:G408390; PIDN:AA1945.1; PID:G408391
 C:Superfamily: human heregulin; EGF homology; immunoglobulin homology
 F:182-221/Domain: EGF homology <EGF>

Query Match 37.0%; Score 102.5; DB 2; Length 636;
 Best Local Similarity 31.2%; Pred. No. 0.00042;
 Matches 15; Conservative 13; Mismatches 19; Indels 1; Gaps 1;

Oy 1 HFPCRDKDLAVCLNDGECEFYIEITLTGSHKH-CRCKEGVCGVRCDOFL 47
 Db 178 HLIKCAEKKEKTFCTVNGGECFTVXKDLNSPRLCKCPNEFTGDRCONV 225

Search completed: May 4, 2005, 12:07:50
 Job time : 40 secs

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GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: May 4, 2005, 12:07:13 ; Search time 133 Seconds
(without alignments)
117.714 Million cell updates/sec

Title: US-09-107-979-4

Perfect score: 277

Sequence: 1 HFRPCDKDLAYCINDGECE.....SHKRCRKEGYGQVRCDFL 47

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 1426032 seqs, 333106140 residues

Total number of hits satisfying chosen parameters: 1426032

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

Published Applications AA:*
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20: /cgn2_6/ptodata/1/pubppa/US08_PUBCOMB.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query	Match Length	ID	Description
1	277	100.0	47	US-09-817-647-4	Sequence 4, Appl1
2	277	100.0	47	US-09-817-647-8	Sequence 8, Appl1
3	277	100.0	47	US-09-877-665-4	Sequence 4, Appl1
4	277	100.0	47	US-09-877-665-8	Sequence 8, Appl1
5	277	100.0	47	US-10-136-573A-4	Sequence 4, Appl1
6	277	100.0	47	US-10-136-573A-8	Sequence 8, Appl1
7	277	100.0	47	US-10-215-862-4	Sequence 4, Appl1
8	277	100.0	47	US-10-215-862-8	Sequence 8, Appl1
9	277	100.0	47	US-10-944-116-4	Sequence 4, Appl1
10	277	100.0	47	US-10-944-116-8	Sequence 8, Appl1
11	277	100.0	48	US-10-240-411-6	Sequence 6, Appl1
12	277	100.0	157	US-10-609-370-2	Sequence 2, Appl1
13	277	100.0	360	US-09-817-647-7	Sequence 7, Appl1

14	277	100.0	360	US-09-877-665-7	Sequence 7, Appl1
15	277	100.0	360	US-10-136-573A-7	Sequence 7, Appl1
16	277	100.0	360	US-10-215-862-7	Sequence 7, Appl1
17	277	100.0	360	US-10-944-116-7	Sequence 7, Appl1
18	277	100.0	362	US-09-817-647-3	Sequence 3, Appl1
19	277	100.0	362	US-09-877-665-3	Sequence 3, Appl1
20	277	100.0	362	US-10-136-573A-3	Sequence 3, Appl1
21	277	100.0	362	US-10-215-862-3	Sequence 3, Appl1
22	277	100.0	362	US-10-944-116-3	Sequence 3, Appl1
23	277	100.0	696	US-09-817-647-23	Sequence 23, Appl1
24	277	100.0	696	US-09-877-665-23	Sequence 23, Appl1
25	277	100.0	696	US-10-136-573A-23	Sequence 23, Appl1
26	277	100.0	696	US-10-215-862-23	Sequence 23, Appl1
27	277	100.0	696	US-10-944-116-23	Sequence 23, Appl1
28	277	100.0	713	US-09-817-647-2	Sequence 2, Appl1
29	277	100.0	713	US-09-877-665-2	Sequence 2, Appl1
30	277	100.0	713	US-10-136-573A-2	Sequence 2, Appl1
31	277	100.0	713	US-10-215-862-2	Sequence 2, Appl1
32	277	100.0	713	US-10-944-116-2	Sequence 2, Appl1
33	277	100.0	720	US-09-817-647-6	Sequence 6, Appl1
34	277	100.0	720	US-09-877-665-6	Sequence 6, Appl1
35	277	100.0	720	US-10-136-573A-6	Sequence 6, Appl1
36	277	100.0	720	US-10-215-862-6	Sequence 6, Appl1
37	277	100.0	720	US-10-944-116-6	Sequence 6, Appl1
38	277	100.0	720	US-09-817-647-14	Sequence 14, Appl1
39	277	100.0	49	US-09-877-665-14	Sequence 14, Appl1
40	277	100.0	49	US-10-136-573A-14	Sequence 14, Appl1
41	277	100.0	49	US-10-215-862-14	Sequence 14, Appl1
42	277	100.0	49	US-10-944-116-14	Sequence 14, Appl1
43	277	100.0	50	US-10-096-241-12	Sequence 12, Appl1
44	277	100.0	53	US-10-609-370-17	Sequence 17, Appl1
45	277	100.0	53	US-10-609-370-17	Sequence 17, Appl1

ALIGNMENTS

RESULT 1
US-09-817-647-4
Sequence 4, Application US/09817647
Patent No. US20020082229A1
GENERAL INFORMATION:
APPLICANT: Goddard, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
TITLE OF INVENTION: E2B Receptor-Specific Neuregulin Related Ligands and Uses Therefor
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESSES:
ADDRESS: Genentech, Inc.
STREET: 1 DNA Way
CITY: South San Francisco
STATE: California
COUNTRY: USA
ZIP: 94080
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Winpatin (Genentech)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/817,647
FILING DATE: 26-Mar-2001
CLASSIFICATION: <Unknown>
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 09/107,979
FILING DATE: <Unknown>
ATTORNEY/AGENT INFORMATION:
NAME: Conley, Deirdre L.
REGISTRATION NUMBER: 36,487
REFERENCE/DOCKET NUMBER: P1084R1-2
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/225-2066
TELEFAX: 650/952-9881
INFORMATION FOR SEQ ID NO: 4:

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; SEQUENCE CHARACTERISTICS:
; LENGTH: 47 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
;
; FEATURE:
; NAME/KEY: NR3 EGF-like domain/amino acid seq.
; LOCATION: 1-47
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
; SEQUENCE DESCRIPTION: SEQ ID NO: 4:
US-09-817-647-4
;
Query Match 100.0%; Score 277; DB 9; Length 47;
Best Local Similarity 100.0%; Pred. No. 4.3e-26;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFKPCRDKDLAYCLNDGECFVIEITLTGSHKRCCKEGYGVRCDFL 47
1 HFKPCRDKDLAYCLNDGECFVIEITLTGSHKRCCKEGYGVRCDFL 47
Db

RESULT 2
US-09-817-647-8
; Sequence 8, Application US/09817647
; Patent No. US20020082229A1
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; Ligands and Uses Therefor
;
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
;
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatIn (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/817,647
; FILING DATE: 26-Mar-2001
; CLASSIFICATION: <Unknown>
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 09/107,979
; FILING DATE: <Unknown>
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: P1084R1-2
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 8:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 47 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
;
; FEATURE:
; NAME/KEY: NR3 EGF-like domain/amino acid seq.
; LOCATION: 1-47
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
; SEQUENCE DESCRIPTION: SEQ ID NO: 8:
US-09-817-647-8
;
Query Match 100.0%; Score 277; DB 9; Length 47;
Best Local Similarity 100.0%; Pred. No. 4.3e-26;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
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QY 1 HFKPCRDKDLAYCLNDGECFVIEITLTGSHKRCCKEGYGVRCDFL 47
1 HFKPCRDKDLAYCLNDGECFVIEITLTGSHKRCCKEGYGVRCDFL 47
Db

RESULT 3
US-09-877-665-4
; Sequence 4, Application US/09877665
; Patent No. US20020164680A1
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; Ligands and Uses Therefor
;
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
;
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatIn (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/877,665
; FILING DATE: 08-Jun-2001
; CLASSIFICATION: <Unknown>
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US/09/109,206
; FILING DATE: 30-Jun-1998
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: P1084R1-1
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 4:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 47 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
;
; FEATURE:
; NAME/KEY: NR3 EGF-like domain/amino acid seq.
; LOCATION: 1-47
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
; SEQUENCE DESCRIPTION: SEQ ID NO: 4:
US-09-877-665-4
;
Query Match 100.0%; Score 277; DB 9; Length 47;
Best Local Similarity 100.0%; Pred. No. 4.3e-26;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFKPCRDKDLAYCLNDGECFVIEITLTGSHKRCCKEGYGVRCDFL 47
1 HFKPCRDKDLAYCLNDGECFVIEITLTGSHKRCCKEGYGVRCDFL 47
Db

RESULT 4
US-09-877-665-8
; Sequence 8, Application US/09877665
; Patent No. US20020164680A1
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; Ligands and Uses Therefor
;
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
;
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatIn (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/877,665
; FILING DATE: 08-Jun-2001
; CLASSIFICATION: <Unknown>
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US/09/109,206
; FILING DATE: 30-Jun-1998
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: P1084R1-1
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 4:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 47 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
;
; FEATURE:
; NAME/KEY: NR3 EGF-like domain/amino acid seq.
; LOCATION: 1-47
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
; SEQUENCE DESCRIPTION: SEQ ID NO: 4:
US-09-877-665-8
;
Query Match 100.0%; Score 277; DB 9; Length 47;
Best Local Similarity 100.0%; Pred. No. 4.3e-26;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
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STREET: 1 DNA Way
CITY: South San Francisco
STATE: California
COUNTRY: USA
ZIP: 94080
COMPUTER READABLE FORM:
- MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WinPatIn (Genentech)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/877,665
FILING DATE: 08-Jun-2001
CLASSIFICATION: <Unknown>
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/09/109,206
FILING DATE: 30-Jun-1998
ATTORNEY/AGENT INFORMATION:
NAME: Conley, Delandre L.
REGISTRATION NUMBER: 36,487
REFERENCE/DOCKET NUMBER: P1084R1-1
TELEPHONE: 650/225-2066
TELEFAX: 650/952-9881
INFORMATION FOR SEQ ID NO: 8:
SEQUENCE CHARACTERISTICS:
LENGTH: 47 amino acids
TYPE: Amino Acid
TOPOLOGY: Linear
FEATURE:
NAME/KEY: NR3 EGF-like domain/amino acid seq.
LOCATION: 1-47
IDENTIFICATION METHOD:
OTHER INFORMATION:
SEQUENCE DESCRIPTION: SEQ ID NO: 8:
US-09-877-665-8
Query Match 100.0%; Score 277; DB 9; Length 47;
Best Local Similarity 100.0%; Pred. No. 4.3e-26;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
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Db 1 HFPCRDKDLAYCLNDEGCVIETLTGSHKRCCKEGYQGVRCDFL 47
RESULT 5
US-10-136-573A-4
Sequence 4, Application US/10136573A
Publication No. US20020161200A1
GENERAL INFORMATION:
APPLICANT: Godowski, Paul J.
APPLICANT: Zhang, Dong Xiao
TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related Ligands and
FILE REFERENCE: P1084R1C2
CURRENT APPLICATION NUMBER: US/10/136,573A
PRIOR FILING DATE: 2002-04-29
PRIOR APPLICATION NUMBER: US 09/480,977
PRIOR FILING DATE: 2000-01-11
PRIOR APPLICATION NUMBER: US 08/899,437
PRIOR FILING DATE: 1997-07-24
PRIOR APPLICATION NUMBER: US 60/052,019
PRIOR FILING DATE: 1997-07-09
NUMBER OF SEQ ID NOS: 23
SEQ ID NO 4
LENGTH: 47
TYPE: PRT
ORGANISM: Homo sapiens
US-10-136-573A-4
Query Match 100.0%; Score 277; DB 13; Length 47;

Best Local Similarity 100.0%; Pred. No. 4.3e-26;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
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Db 1 HFPCRDKDLAYCLNDEGCVIETLTGSHKRCCKEGYQGVRCDFL 47
RESULT 6
US-10-136-573A-8
Sequence 8, Application US/10136573A
Publication No. US20020161200A1
GENERAL INFORMATION:
APPLICANT: Godowski, Paul J.
APPLICANT: Zhang, Dong Xiao
TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related Ligands and
FILE REFERENCE: P1084R1C2
CURRENT APPLICATION NUMBER: US/10/136,573A
PRIOR FILING DATE: 2002-04-29
PRIOR APPLICATION NUMBER: US 09/480,977
PRIOR FILING DATE: 2000-01-11
PRIOR APPLICATION NUMBER: US 08/899,437
PRIOR FILING DATE: 1997-07-24
PRIOR APPLICATION NUMBER: US 60/052,019
PRIOR FILING DATE: 1997-07-09
NUMBER OF SEQ ID NOS: 23
SEQ ID NO 8
LENGTH: 47
TYPE: PRT
ORGANISM: Homo sapiens
US-10-136-573A-8
Query Match 100.0%; Score 277; DB 13; Length 47;
Best Local Similarity 100.0%; Pred. No. 4.3e-26;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Qy 1 HFPCRDKDLAYCLNDEGCVIETLTGSHKRCCKEGYQGVRCDFL 47
Db 1 HFPCRDKDLAYCLNDEGCVIETLTGSHKRCCKEGYQGVRCDFL 47
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US-10-215-862-4
Sequence 4, Application US/10215862
Publication No. US20030036166A1
GENERAL INFORMATION:
APPLICANT: Godowski, Paul J.
APPLICANT: Zhang, Dong Xiao
TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related Ligands and
FILE REFERENCE: P1084R1D2C1
CURRENT APPLICATION NUMBER: US/10/215,862
PRIOR FILING DATE: 2002-09-24
PRIOR APPLICATION NUMBER: US 09/126,663
PRIOR FILING DATE: 1998-07-30
PRIOR APPLICATION NUMBER: US 08/899,437
PRIOR FILING DATE: 1997-07-24
PRIOR APPLICATION NUMBER: US 60/052,019
PRIOR FILING DATE: 1997-07-09
NUMBER OF SEQ ID NOS: 23
SEQ ID NO 4
LENGTH: 47
TYPE: PRT
ORGANISM: Homo sapiens
US-10-215-862-4
Query Match 100.0%; Score 277; DB 14; Length 47;
Best Local Similarity 100.0%; Pred. No. 4.3e-26;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFKPCRDKDLAYCLNDGECFVETLTGSHKRCCKEGYGVRCDOFL 47
DB 1 HFKPCRDKDLAYCLNDGECFVETLTGSHKRCCKEGYGVRCDOFL 47

RESULT 8

US-10-215-862-8
Sequence 8, Application US/10215862
Publication No. US20030036166A1
GENERAL INFORMATION:
APPLICANT: Godowski, Paul J.
APPLICANT: Mark, Melanie Rose
APPLICANT: Zhang, Dong Xiao
TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related Ligands and
TITLE OF INVENTION: Uses Therefor
FILE REFERENCE: P1084R1D2C1
CURRENT APPLICATION NUMBER: US/10/215,862
CURRENT FILING DATE: 2002-09-24
PRIOR APPLICATION NUMBER: US 09/126,663
PRIOR FILING DATE: 1998-07-30
PRIOR APPLICATION NUMBER: US 08/899,437
PRIOR FILING DATE: 1997-07-24
PRIOR APPLICATION NUMBER: US 60/052,019
PRIOR FILING DATE: 1997-07-09
NUMBER OF SEQ ID NOS: 23
SEQ ID NO 8
LENGTH: 47
TYPE: PRT
ORGANISM: Homo sapiens
US-10-215-862-8

Query Match 100.0%; Score 277; DB 14; Length 47;
Best Local Similarity 100.0%; Pred. No. 4.3e-26;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFKPCRDKDLAYCLNDGECFVETLTGSHKRCCKEGYGVRCDOFL 47
DB 1 HFKPCRDKDLAYCLNDGECFVETLTGSHKRCCKEGYGVRCDOFL 47

US-10-944-116-4
Sequence 4, Application US/10944116
Publication No. US20050048622A1
GENERAL INFORMATION:
APPLICANT: Godowski, Paul J.
APPLICANT: Mark, Melanie Rose
APPLICANT: Zhang, Dong Xiao

TITLE OF INVENTION: ErbB4 Receptor-Specific Neuregulin Related
Ligands and Uses Therefor
NUMBER OF SEQUENCES: 23

CORRESPONDENCE ADDRESS:
ADDRESSEE: Genentech, Inc.

STREET: 1 DNA Way
CITY: South San Francisco
STATE: California
COUNTRY: USA
ZIP: 94080

COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk

COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: WinPatIn (Genentech)

CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/10/944,116

FILING DATE: 17-Sep-2004
CLASSIFICATION: <Unknown>

PRIOR APPLICATION DATA:
APPLICATION NUMBER: 09/877665

FILING DATE: 08-JUN-2001

APPLICATION NUMBER: 09/109206

FILING DATE: 30-JUN-1998

APPLICATION NUMBER: 60/052019

FILING DATE: 09-JUL-1997
ATTORNEY/AGENT INFORMATION:
NAME: Conley, Deirdre L.

REGISTRATION NUMBER: 36,487

REFERENCE/DOCKET NUMBER: P1084R1-1C2

TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/225-2066

TELEFAX: 650/952-9881

INFORMATION FOR SEQ ID NO: 4:

SEQUENCE CHARACTERISTICS:

LENGTH: 47 amino acids

TYPE: Amino Acid

TOPOLOGY: Linear

FEATURE:
NAME/KEY: NRG3 EGF-like domain/amino acid seq.

LOCATION: 1-47

IDENTIFICATION METHOD:
OTHER INFORMATION:

SEQUENCE DESCRIPTION: SEQ ID NO: 4:

US-10-944-116-4

Query Match 100.0%; Score 277; DB 17; Length 47;

Best Local Similarity 100.0%; Pred. No. 4.3e-26;

Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFKPCRDKDLAYCLNDGECFVETLTGSHKRCCKEGYGVRCDOFL 47
DB 1 HFKPCRDKDLAYCLNDGECFVETLTGSHKRCCKEGYGVRCDOFL 47

US-10-944-116-8

Sequence 8, Application US/10944116

Publication No. US20050048622A1

GENERAL INFORMATION:
APPLICANT: Godowski, Paul J.

APPLICANT: Mark, Melanie Rose

APPLICANT: Zhang, Dong Xiao

TITLE OF INVENTION: ErbB4 Receptor-Specific Neuregulin Related
Ligands and Uses Therefor

NUMBER OF SEQUENCES: 23

CORRESPONDENCE ADDRESS:
ADDRESSEE: Genentech, Inc.

STREET: 1 DNA Way
CITY: South San Francisco
STATE: California
COUNTRY: USA
ZIP: 94080

COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk

COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: WinPatIn (Genentech)

CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/10/944,116

FILING DATE: 17-Sep-2004
CLASSIFICATION: <Unknown>

PRIOR APPLICATION DATA:
APPLICATION NUMBER: 09/877665

FILING DATE: 08-JUN-2001

APPLICATION NUMBER: 09/109206

FILING DATE: 30-JUN-1998

APPLICATION NUMBER: 60/052019

FILING DATE: 09-JUL-1997

ATTORNEY/AGENT INFORMATION:
NAME: Conley, Deirdre L.

REGISTRATION NUMBER: 36,487

REFERENCE/DOCKET NUMBER: P1084R1-1C2

TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/225-2066

TELEFAX: 650/952-9881

INFORMATION FOR SEQ ID NO: 8:

SEQUENCE CHARACTERISTICS:

LENGTH: 47 amino acids
TYPE: Amino Acid
TOPOLOGY: Linear
FEATURE:
NAME/KEY: NR3 EGF-like domain/amino acid seq.
LOCATION: 1-47
IDENTIFICATION METHOD:
OTHER INFORMATION:
SEQUENCE DESCRIPTION: SEQ ID NO: 8
US-10-944-116-8

Query Match 100.0%; Score 277; DB 17; Length 47;
Best Local Similarity 100.0%; Pred. No. 4.3e-26;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFKPCRDKLAYCLNDGECFVIEITLTGSHKCRCKEGYQGVRCDFL 47
Db 1 HFKPCRDKLAYCLNDGECFVIEITLTGSHKCRCKEGYQGVRCDFL 47

RESULT 11
US-10-240-411-6
Sequence 6, Application US/10240411
Publication No. US20040121326A1
GENERAL INFORMATION:
APPLICANT: Harari, Daniel
TITLE OF INVENTION: NOVEL GROWTH FACTOR WHICH ACTS THROUGH ERB B-4 RECEPTOR TYROSINE
FILE REFERENCE: 01/21918
CURRENT APPLICATION NUMBER: US/10/240,411
CURRENT FILING DATE: 2003-05-16
PRIOR APPLICATION NUMBER: US 09/553,769
PRIOR FILING DATE: 2000-04-21
NUMBER OF SEQ ID NOS: 20
SOFTWARE: PatentIn version 3.0
SEQ ID NO 6
LENGTH: 48
TYPE: PRT
ORGANISM: Mus musculus
US-10-240-411-6
Query Match 100.0%; Score 277; DB 16; Length 48;
Best Local Similarity 100.0%; Pred. No. 4.4e-26;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFKPCRDKLAYCLNDGECFVIEITLTGSHKCRCKEGYQGVRCDFL 47
Db 2 HFKPCRDKLAYCLNDGECFVIEITLTGSHKCRCKEGYQGVRCDFL 48

RESULT 12
US-10-609-370-2
Sequence 2, Application US/10609370
Publication No. US20040048295A1
GENERAL INFORMATION:
APPLICANT: Young et al.
TITLE OF INVENTION: Heregulin-like Factor
FILE REFERENCE: PF383D1
CURRENT APPLICATION NUMBER: US/10/609,370
CURRENT FILING DATE: 2003-07-01
PRIOR APPLICATION NUMBER: 09/097,681
PRIOR FILING DATE: 1998-06-16
PRIOR APPLICATION NUMBER: 60/049,942
PRIOR FILING DATE: 1997-06-17
NUMBER OF SEQ ID NOS: 22
SOFTWARE: PatentIn version 3.2
SEQ ID NO 2
LENGTH: 157
TYPE: PRT
ORGANISM: Homo sapiens
US-10-609-370-2

Query Match 100.0%; Score 277; DB 15; Length 157;
Best Local Similarity 100.0%; Pred. No. 1.4e-25;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFKPCRDKLAYCLNDGECFVIEITLTGSHKCRCKEGYQGVRCDFL 47
Db 31 HFKPCRDKLAYCLNDGECFVIEITLTGSHKCRCKEGYQGVRCDFL 77

RESULT 13
US-09-817-647-7
Sequence 7, Application US/09817647
Patent No. US20020082229A1
GENERAL INFORMATION:
APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
Ligands and Uses Therefor
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
ADDRESSEE: Genentech, Inc.
STREET: 1 DNA Way
CITY: South San Francisco
STATE: California
COUNTRY: USA
ZIP: 94080
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WinPatIn (Genentech)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/817,647
FILING DATE: 26-Mar-2001
CLASSIFICATION: <Unknown>
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 09/107,979
FILING DATE: <Unknown>
ATTORNEY/AGENT INFORMATION:
NAME: Conley, Deirdre L.
REGISTRATION NUMBER: 36,487
REFERENCE/DOCKET NUMBER: P1084R1-2
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/225-2066
TELEFAX: 650/952-9881
INFORMATION FOR SEQ ID NO: 7:
SEQUENCE CHARACTERISTICS:
LENGTH: 360 amino acids
TYPE: Amino Acid
TOPOLOGY: Linear
FEATURE:
NAME/KEY: hNRG3 extracellular domain/Amino AcidSeq
LOCATION: 1-360
IDENTIFICATION METHOD:
OTHER INFORMATION:
SEQUENCE DESCRIPTION: SEQ ID NO: 7
US-09-817-647-7
Query Match 100.0%; Score 277; DB 9; Length 360;
Best Local Similarity 100.0%; Pred. No. 3.3e-25;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFKPCRDKLAYCLNDGECFVIEITLTGSHKCRCKEGYQGVRCDFL 47
Db 286 HFKPCRDKLAYCLNDGECFVIEITLTGSHKCRCKEGYQGVRCDFL 332

RESULT 14
US-09-877-665-7
Sequence 7, Application US/09877665
Patent No. US20020164680A1
GENERAL INFORMATION:
APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related

Ligands and Uses Therefor
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
ADDRESSEE: Genentech, Inc.
STREET: 1 DNA Way
CITY: South San Francisco
STATE: California
COUNTRY: USA
ZIP: 94080
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WinPatin (Genentech)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/877,665
FILING DATE: 08-Jun-2001
CLASSIFICATION: <Unknown>
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/09/109,206
FILING DATE: 30-Jun-1998
ATTORNEY/AGENT INFORMATION:
NAME: Conley, Deirdre L.
REGISTRATION NUMBER: 36,487
REFERENCE/DOCKET NUMBER: P1084R1-1
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/225-2066
TELEFAX: 650/952-9881
INFORMATION FOR SEQ ID NO: 7:
SEQUENCE CHARACTERISTICS:
LENGTH: 360 amino acids
TYPE: Amino Acid
TOPOLOGY: Linear
FEATURE:
NAME/KEY: hNRG3 extracellular domain/Amino AcidSeq
LOCATION: 1-360
IDENTIFICATION METHOD:
OTHER INFORMATION:
SEQUENCE DESCRIPTION: SEQ ID NO: 7:
US-09-877-665-7
Query Match 100.0%; Score 277; DB 9; Length 360;
Best Local Similarity 100.0%; Pred. No. 3.3e-25;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 HFKPCRDKDLAYCLNDGECFVIEITLGSNKHCRCKEGYGVRCDFL 47
DB 286 HFKPCRDKDLAYCLNDGECFVIEITLGSNKHCRCKEGYGVRCDFL 332
RESULT 15
US-10-136-573A-7
Sequence 7, Application US/10136573A
Publication No. US20020161200A1
GENERAL INFORMATION:
APPLICANT: Godowski, Paul J.
APPLICANT: Mark, Melanie Rose
APPLICANT: Zhang, Dong Xiao
TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related Ligands and
FILE REFERENCE: P1084R1C2
CURRENT APPLICATION NUMBER: US/10/136,573A
CURRENT FILING DATE: 2002-04-29
PRIOR APPLICATION NUMBER: US 09/480,977
PRIOR FILING DATE: 2000-01-11
PRIOR APPLICATION NUMBER: US 08/899,437
PRIOR FILING DATE: 1997-07-24
PRIOR APPLICATION NUMBER: US 60/052,019
PRIOR FILING DATE: 1997-07-09
NUMBER OF SEQ ID NOS: 23
SEQ ID NO 7
LENGTH: 360
TYPE: PRT

ORGANISM: Homo sapiens
US-10-136-573A-7
Query Match 100.0%; Score 277; DB 13; Length 360;
Best Local Similarity 100.0%; Pred. No. 3.3e-25;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 HFKPCRDKDLAYCLNDGECFVIEITLGSNKHCRCKEGYGVRCDFL 47
DB 286 HFKPCRDKDLAYCLNDGECFVIEITLGSNKHCRCKEGYGVRCDFL 332
Search completed: May 4, 2005, 12:20:04
Job time : 134 secs